

CATALOGUES OF ART EXHIBITIONS ORGANIZED BY THE ARTS COUNCIL
OF GREAT BRITAIN REPUBLISHED ON MICROFICHE

Published on microfiche by:

Chadwyck-Healey Ltd
20 Newmarket Road
Cambridge CB5 8DT
England

Chadwyck-Healey Inc
623 Martense Avenue
Teaneck NJ 07666
USA

Date of publication and production of master: 1982

Series: The purpose of this series is to make available those catalogues that have lasting interest through their text or their illustrations. Catalogues and cumulations of titles in the series are available from the publishers.

Serial numbers: Each title is identified by a three-part serial number. The first part of the serial number designates the sales list in which the title was first announced. The second part indicates the agent of publication, i.e. the museum, gallery or organisation that was responsible for the publication of the catalogue. The third part of the serial number is the number allotted to that title.

Copyright, microfiche edition: Arts Council of Great Britain and Chadwyck-Healey Ltd.

Location of original: Arts Council of Great Britain, 105 Piccadilly, London W1V 0AU.

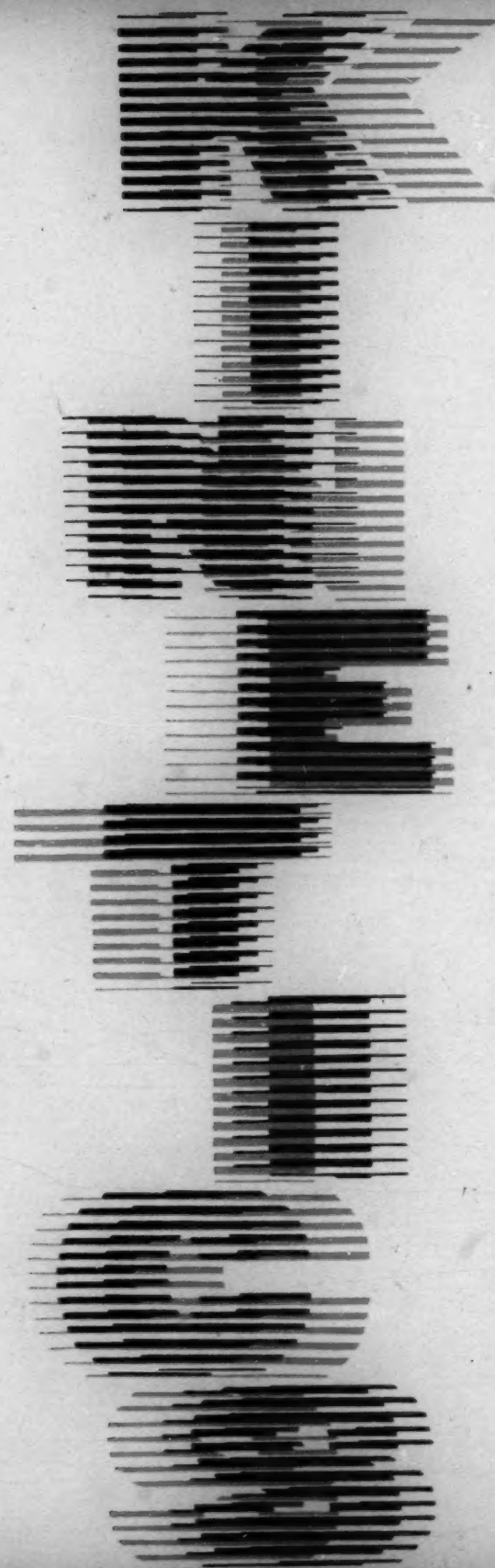
Technical data: Producing laboratory: Chadwyck-Healey Microform Publishing Services, 10 North End, Bassingbourn, Cambs., England.

List 33

STEPHEN ANTONAKOS
 FLETCHER BENTON
 ALBERTO BIASI
 DAVIDE Boriani
 MARTHA BOTO
 ROBERT BREER
 POL BURY
 ALEXANDER CALDER
 NINO CALOS
 MALCOLM CARDER
 AL CHENEY
 GIANNI COLOMBO
 MIKE COOPER
 H R DEMARCO
 HORACIO GARCIA-ROSSI
 GERHARD VON GRAEVENITZ
 KEITH GRANT
 LILY GREENHAM
 MICHAEL HAYDEN
 SER HOOGENBOOM
 ARIE JANSMA
 ROBERT JANZ
 HOWARD JONES
 JOHN KAINE
 QYULA KOSICE
 PIOTR KOWALSKI
 HARRY KRAMER
 DANTE LEONELLI
 JULIO LE PARC
 LILIANE LIJN
 PETER LOGAN
 ERNST LURKER
 ADOLF LUTHER
 HEINZ MACK

FRANK J MALINA
 RONALD MALLORY
 WILLEM MARIJS
 BARRY MARTIN
 KENNETH MARTIN
 MANFREDO MASSIRONI
 CHARLES MATTOX
 PRESTON McCLANAHAN
 MICHAEL McKINNON
 CHRISTIAN MEGERT
 FRANCOIS MORELLET
 HANS WALTER MULLER
 BRUNO MUNARI
 NAM JUNE PAIK
 OTTO PIENE
 CHUCK PRENTISS
 WILLIAM PYE
 GEORGE RICKEY
 GARY T RIEVESCHL
 MARCELLO SALVADORI
 NICHOLAS SCHOFFER
 JAMES SEAWRIGHT
 RAY STAACKMAN
 TAKIS
 JEAN TINGUELY
 GUNTHER UECKER
 GREGORIO VARDANEGA
 GABRIELE DE VECCHI
 FRANS VERPOORTEN
 ROGER VILDER
 STEPHEN WILLATS
 BRYAN WYNTER
 JOHAN VAN ZUTPHEN

KINETICS



Catalogue note:
Measurements are given in centimetres.
Titles have been translated where
appropriate. The participating artists
and their galleries have provided the
statements and documentary
information from which this catalogue
has been compiled.

Designed by Crosby/Fletcher/Forbes
Printed by Lund Humphries
London and Bradford

Photographs by:
Sophie Baker, Aldo Ballo, BBC TV, C. A.
Blazer, Jaap Eerland, Fischbach
Gallery, Fototecnica, Reinhard
Friedrich, Claude Gaspari, Elke Hayden,
Studio Yves Hervochon, Evelyn Kane,
Martin Koretz, S. Korn, Helmut R.
Leppien, Mike Lien, Ken Locker, Peter
Moore, Andre Morain, New Art Centre,
Nathan Rabin, Jacques Robert, John D.
Schiff, Roland Schneider, Shepard
Sherbell, Susan Tebby, Sunday Times,
Romain Urhausen, Jean-Claude Valette,
S. K. F. Veenendaal, Felix Rial Viggiano,
John Webb, Deborah Walton, Mike Wells,
Jacob Wynter.

A list of Arts Council publications,
including all exhibition catalogues in
print, can be obtained from the
Publications Department, Arts Council
of Great Britain, 105 Piccadilly,
London W1V 0AU.

KINETICS

Hayward Gallery
London
25 September to
22 November 1970

Acknowledgements

I take this opportunity, on behalf of the Arts Council, of thanking Theo Crosby, who has conceived and arranged the exhibition, and those who have worked with him - in particular Caroline Tisdall for her work on the historical section of the exhibition, Dr Frank Popper both for his introduction to the catalogue and for the advice and help which he has so readily given, Jonathan Benthall for his stimulating essay and Gillian Wise for her report on parallel developments in the USSR.

We are especially grateful to the participating artists, many of whom have made special works for the show and all of whom have gone to endless trouble to make the exhibition worthwhile. Their advice and help with the setting up of such complicated works has proved invaluable.

A number of galleries which specialize in kinetic works have been extremely helpful both in lending works and in putting us in touch with artists. We are particularly grateful to Madame Denise René whose galleries in Paris and Krefeld undertook many arrangements on our behalf. We also appreciate the help we have received from the Esther-Robles Gallery, Los Angeles; the Galeria Bonino, the Howard Wise Gallery and the Fischbach Gallery, all in New York; the Galerie Maeght and Editions Claude Givaudan in Paris; and the Hanover Gallery in London.

We would also like to record our gratitude to the Association Française d'Action Artistique who kindly agreed to extend their patronage to the exhibition.

Finally, we are much indebted to Theo Crosby and the firm of Crosby/Fletcher/Forbes. They have been involved with the exhibition from start to finish. Seldom have we had so much of the complicated organizing of an exhibition lifted off our shoulders and dealt with so sensibly.

Robin Campbell
Director of Art
Arts Council of Great Britain

KINETICS

BY FRANK POPPER

In the shifting spectrum of aesthetic denominations Kinetic Art can be said to represent a certain continuity.

Not only because of the somewhat paradoxical fact that dynamism and transformation are its very essence, but also because many aspects present in embryo at its inception have since become prominent organic features of the art of movement. Actual motion – the central core of this exhibition – has been given new life through combination with light, both in spectacle and in connection with environmental schemes. The participation of the spectator, his autonomous and even creative behaviour have been evoked in a more general context which can be widened to include the relations between art on the one hand, and science and technology on the other.

All these aspects are present, implicitly or explicitly, in the works or statements exhibited here, although each selected work represents an artist whose main concern is held to be with actual motion.

To illustrate this point it is perhaps necessary to recall briefly the origins of the three principal trends in kinetic art – machines, mobiles and light objects in motion. These can be traced back through the artistic tradition in which movement occurs as a theme or as a plastic element. In recent times groups such as the Futurists, Vorticists, Orphists, Constructivists and Dadaists were particularly concerned with the problem of movement. But kinetic art also has an important line of descent in objects which are adjacent to or indeed outside the artistic field.

Articulated statuettes, hydraulic automata, marionnettes, Jacks of the Clock, animated pictures, Colour Organs and human automata may be regarded as forerunners of this art which achieves an unprecedented fusion of aesthetic and technological elements.

Apart from these precedents, the birth of the new art can be firmly ascribed to between 1913 and 1920, when a few isolated figures like Duchamp, Tatlin and Gabo were conceiving their first kinetic works and statements and laying stress on mechanical movement. At about the same time, Tatlin, Rodchenko and Man Ray were constructing their first mobiles, and Thomas Wilfred and A. B. Klein, together with Hirschfeld-Mack and Schwerdtfeger at the Bauhaus, began to develop their Colour Organs and projection techniques in the direction of an art medium of light and movement. Although Moholy-Nagy and Calder pursued more or less continuous artistic research into actual motion in the twenties and thirties, it was only after the middle of the century that the breakthrough into Kinetic Art and its subsequent expansion finally took place. Such artists as Bury, Tinguely, Schöffer and Kramer played a leading part in this development as far as mechanical movement was concerned; Calder, Munari and Kenneth Martin in the domain of the mobile; and Wilfred, Malina and Schöffer in that of lumino-kinetic experiment. The final acceptance and recognition of this fact – both for artists and public – occurred in such important exhibitions as *Bewogen Beweging* at the

Stedelijkmuseum, Amsterdam, in 1961; *Licht und Bewegung* at the Kunsthalle, Berne, in 1965; the Arts Council Exhibition *In Motion, Kunst-Licht-Kunst* at the Stedelijk Van Abbemuseum, Eindhoven, *Directions in Kinetic Sculpture* at the Museum of the University of California, Berkeley, in the following year; *Lumière et Mouvement* at the Musée d'Art Moderne de la Ville de Paris in 1967 and *The Machine* at the Museum of Modern Art, New York in 1969. This widespread acceptance of Kinetic Art as a valid form of expression cannot be entirely dissociated from the parallel development of Optical Art, with its own distinctive methods of involving the spectator on a physical level.

It must be emphasized that we cannot fully appreciate the contribution of each one of the participants in the present exhibition without taking account of the spirit in which he uses motion (as a material, as a tool etc.), whether he is within or outside the Constructivist and Dadaist traditions; whether his inspiration is of artistic, technological or 'natural' origin, and whether he is simply concerned with movement itself or with movement in combination with the various other aspects mentioned above. While I cannot hope to make any detailed analysis along these lines in the present introduction, I can invite the visitor to make his own assessment from the series of approximations I shall attempt.

Movement in its own right is the almost exclusive preoccupation of a number of artists in the Constructivist tradition whether, like George Rickey or Kenneth Martin, they incline

towards touch-, air- or heat-operated mobiles or whether, like Schöffer, Demarco or Vilder they prefer mechanical movement. On the other hand, Alexander Calder – both in his mobiles and in his occasional motorized works – attaches himself to the Surrealist (and Dadaist) tradition, which also predominates in Bury, Tinguely and in a sense also in Uecker. To do justice to each individual artist's profound intentions we would have to mention the role played by division of internal space in Rickey's works; the mathematical elements in Kenneth Martin; the spatio-lumino- and chronodynamic factors in Schöffer; the interplay between spatial problems and ultra-violet light in Demarco; optical-mechanical ambiguity for Vilder; slow, secret, and supernatural motion for Bury; irony and poetry of the non-utilitarian machine in Tinguely, and the notion of purity in Uecker.

American artists like Fletcher Benton, Howard Jones, Ronald Mallory, Charles Mattox and James Seawright are more or less untouched by these opposing Constructivist and Dadaist traditions, and show a more direct involvement with modern technology. And there is a large class of kinetic artists who choose this emphasis on technology rather than upon a particular tradition. On the other hand, Kowalski feels that if technology and art are based on the same common principles, the demonstration of these principles can embody an ironic factor in the Dadaist vein. Others again, like Steve Willats, are more precisely concerned with the isolation of stimuli by technological means. And for yet another group (von

Graevenitz, Mari, Munari) technology is a means of transcending Constructivist preoccupations, by laying stress on the principle of creative programming.

Here again we need to show up the more specific artistic intentions which are involved: Fletcher Benton's control of motion and its relationship to purity of form; Howard Jones's concern with sound in environmental conditions; Ronald Mallory's use of mercury moving in continuous patterns; Charles Mattox's production of objects that seem to react to stimuli and are 'behavioural', and James Seawright's comparable preoccupation with electronically generated patterns of movement and light impulses based on the feedback principle. Kowalski is chiefly concerned with the relationship between energy and matter. Willats wishes to place the observer in a situation where he can identify himself with an omnidirectional object. Von Graevenitz explores statistically the interplay of microelements, while Mari proposes optical structures which can act as new means of communication and aid to define different levels of perception and aesthetic information. Finally, Munari, who has explored almost the whole range of kinetic experimentation, conceives his programmed statements even before the pure and beautiful form, the materials, and the mathematical permutations of his objects have been fixed.

But technology need not be merely the starting point for systematic investigation into easily perceptible phenomena. It may also aid artists in their

quest for the hidden forces in nature. Takis has been particularly concerned with making magnetic force visible and so demonstrating the secret energy that is all around us. Other artists, like Kosice and Haacke (*not in the exhibition*) are mainly concerned with revealing the interaction between modern technology and the natural elements. Kosice by the use of water aims to isolate the very essence of movement: his main concern is with rhythm in space, which, in the Constructivist tradition, he intends to apply to a suspended architecture.

If a distinction in the use of 'natural' and 'mechanical' forces can thus be made at least in the intentions of kinetic artists, the considerable disparity between controllable artificial light and the relatively uncontrolled play of natural light also lends a particular quality and function to the respective works. However a stylistic classification of artists using motion in conjunction with light would divide them in the first instance into the purely painterly tradition (Malina, Calos) and the constructivist field (Boto, Greenham, Demarco, Vardanega and Robert Janz). Antonakos could be classed as bordering on Pop Art, and other artists like Liliane Lijn, Salvadori, McClanahan, Dante Leonelli and Nam June Paik might be characterized more pertinently by their direct approach to physics (or in the case of Mack and Piene to metaphysics).

Once again, the essential intentions of the artists lie on another level. Malina wants to communicate the new visions of the universe found through

scientific research in artistic terms. Calos wishes to raise a primarily poetic vision onto an architectural scale. On the other hand Martha Boto is primarily concerned with purely spatial and dynamic problems such as contraction and expansion, Lily Greenham with rigidly structured chromatic perception and illusion, Demarco with the apparition and the disappearance of form and formal elements, Vardanega with a great variety of strictly programmed spatial effects.

The American Antonakos is mainly preoccupied with the task of making a functional equation between his statements and the surrounding space, Lilliane Lijn with that of 'another spatial dimension' situated between the poetry of science and the science of poetry, Salvadori by the interaction of nature with man-made discoveries, McClanahan by light as a raw material and as a strict equivalent to colour, Dante Leonelli with coloured light and basic form, Nam June Paik with the imaginative deformation of television images. As to the founders of the German Zero group, Mack and Piene, the former is fascinated by the dynamic structure of colour and light, the latter by articulating light and thus making it real and perceptible as such in types of arrangement which are close to spectacle.

In effect, emphasis on perception by as many of the senses as possible in a 'total' spectacle is a widespread tendency among kinetic artists. Harry Kramer,

the anti-scientist *par excellence*, considers that the frontier between the plastic arts and the spectacle has definitely been eliminated: his chief aim is to procure the spectator a strong emotional experience – even an irritation of the senses – by most unusual, striking and 'spectacular' motions, whereas Michael Hayden wishes to appeal to the different senses of the spectator by the presentation of many different artistic expressions within a unifying bond and without disdaining the use of modern developments in technology.

In any event, the solicitation of the spectator is one of the preliminary steps to making him participate more actively in the aesthetic process, a tendency here represented by Robert Breer and Julio Le Parc. Breer's Styrofoam shapes, though mechanically driven, tempt the spectator into action by following an ever-changing itinerary just as some of Le Parc's statements (e.g. his *Passages accidentés*) solicit by their instability the visitor's autonomous behaviour. Breer's preoccupation with an active experience of time is always in his artefacts, whereas the more general intentions of Le Parc lie in the realm of the aesthetic of the game and in a strong appeal for a demythologising of art.

However, few of these general or particular preoccupations are still meaningful today unless brought into relation with the notion of environment. In the last few years kinetic artists have enlarged their statements to such an extent that the art

object has to a large degree been superseded by a general space occupied both by the spectator and the plastic statements. The aesthetic proposition is thus brought into a definite relationship with the movements, actions and reactions of the public. The space of art becomes the privileged meeting ground of physical and psychological phenomena.

Among the artists participating in this exhibition a certain number are particularly committed to this environmental direction: for example, Colombo, Megert, Hans-Walter Müller, Lily Greenham, Lilliane Lijn, Michael Hayden, Steve Willats and Dante Leonelli.

The overriding concern of Soto (*not in the exhibition*) with optical synthesis has been carried over into the domain of the 'Penetrables', forests of metal rods or nylon thread where the visitor may perceive, as a result of his own actions, the relationship of forces that exist in general in our universe. Colombo's aims are not very different from those of Soto: starting from programmed graphic and three-dimensional structures, he now creates 'environments' based on light and permutable structures – elastic space that can be 'inhabited psychologically'. As in the work of other artists belonging to the 'Nouvelle Tendance', Colombo tries to create a series of environmental situations in which the functional and the purely aesthetic interpenetrate and

cause new and autonomous behaviour in the spectator. In the same context, Megert's mirrors can be seen as situations in permanent transformation, with the onlooker experiencing spatial sensations of great originality and flexibility. Architectural conceptions such as pneumatic structures, plastic and auditive elements such as the projection of images and the broadcasting of music mingle in Hans-Walter Müller's environmental statements, which are eminently mobile. Lily Greenham and Lilliane Lijn are now often concerned with the spatial and chromatic modification of a built-up site. On the other hand Hayden, Willats and Leonelli act on an interior environment in such a way as to bring out the relationship between isolated psychological stimuli and surrounding space.

Can this great variety of individual and collective tendencies and preoccupations be regarded as a satisfactory interplay between technical, social and artistic factors?

Kinetic Art has assumed the essential role of symbolically representing scientific and technological progress. It has thus shown the way to the acceptance and incorporation of electronic and cybernetic advances. Kinetic Art is also sociologically becoming more and more involved: the first steps have been taken to participate effectively in the transformation of the existing environment, in the incorporation of artistic

activity into new cities under construction, in bringing art into the street. As to the aesthetic aspect, a new relationship between the artist, the work of art and the spectator is about to establish itself. The work loses its materiality, becomes effect, the artist loses his halo, becomes a researcher, the spectator leaves the domain of cultural conditioning, becomes active and creative himself.

It would take a very narrow view of Kinetic Art to consider it only as a stage in the development of the element of movement in the history of art, or as an episode in the struggle for influence of science and technology on art in general. Kinetic Art must also be seen in its wider social and aesthetic implications.

Paris, May 1970

INTRODUCTION

It would be hopeless to pretend that any very precise method of selection was used in arriving at the content of this exhibition. A great deal of advice was sought and taken. It became clear that Kinetics had grown from a tiny minority interest to a world movement which had branched into many different fields, and linked into almost every kind of contemporary art activity, from constructions to happenings.

Early definitions of Kinetics included what is now called Op art, transformables, Light art, Cyborg art (objects which respond to stimuli), inflatables, happenings and performances. Many of the artists shown here do some or all of these things, and there is enough material in each category to fill the Hayward Gallery many times over. In the face of this multiplicity we decided to concentrate on *mechanical movement*. It is a clear category and it already carries a certain historical flavour. Not only are mechanical works notoriously difficult to maintain, they are being slowly superseded by more advanced electronic technologies. Here printed and micro-circuitry give promise of greater permanence. Some examples of these technically more sophisticated works can be found in the exhibition.

In other cases the heroic figures of the post-war resurgence of kinetic art (most of them in early middle age) were invited to contribute whatever they wished, to provide a basis for comparison with the work of the new generation.

Some very young artists were also invited, and the Arts Council was able to make small contributions to the cost of their works. We are grateful to them for the considerable financial sacrifice that making a large kinetic work entails. It can seldom be sold, and we can only hope that the exposure of their work is an adequate compensation. This is no place to discuss the place of state patronage of the arts, but in areas of advanced technology the cost of manufacturing a work of art is discouragingly high. It seems unlikely that we will ever control and humanize the new technologies without the continuous involvement, and adequate subsidy, of the artist.

The first section of the exhibition, researched by Caroline Tisdall, is intended to provide an historical background, to show the many threads that relate the movement to the past. The transparencies and films show the roots of Kinetics in photography, in Cubism, Construction, the Bauhaus and above all in the Italian Futurist Movement. Miss Tisdall has edited this section in the catalogue and also produced the selected bibliography.

We had hoped to show some of the work being done at the present time by Russian Kineticists, but this proved impossible. We have included, however, a manifesto by the Dvijzenie group, and a report by Gillian Wise, who has been studying in the USSR for the past year.

I must also thank the Arts Council for the opportunity to create the show, particularly Robin Campbell and Andrew Dempsey who have been entirely and inextricably involved in its organization.

Theo Crosby

ARTICULATE ENERGY

KINETIC ART IN TRANSFORMATION BY JONATHAN BENTHALL

She saw his clenched, mechanical body moving there like an obsession. D. H. Lawrence, *Women in Love*, chapter 30.

Kineticism, an aesthetic of movement, has no theoretical basis that could be taken seriously today by a practising artist or art student. In all or almost all traditional visual art there is, as Frank Popper has rightly argued, an important element of movement. As a spectator, one surveys an artefact from numerous angles and distances. Even when one's body and head are still, one scans the object with one's eyes. Also, artists have used various techniques for centuries to suggest movement in static artefacts. The human psycho-optical system is highly susceptible to effects of 'virtual movement', and this has been a dominant feature of recent painting and sculpture, for instance in the modulation of surfaces practised by the Groupe de Recherche d'Art Visuel, Bridget Riley and several others. Art that uses virtual rather than actual movement is often, quite reasonably, classed as kinetic.

But the label 'kinetic' is most frequently used to describe three-dimensional works in motion. The work of Gabo, Duchamp, Moholy-Nagy and Calder would support the argument that kinetic art has never recovered the liveliness and originality that it had before World War 2, and has become much more pretentious. Gabo himself abstained from following up his important *Kinetic Construction* (1920), a single motor-driven vibrating wire, on the grounds that electric motors were too crude for the kind of sculptural forms and movements that he

envisaged. Certainly many kinetic artists since World War 2 have either elaborated on old ideas or else relied on techniques whose heaviness and crudeness Gabo would deplore. The device of the turn-table, a rotating motor-driven surface embellished in some way or other, has dug its own particularly monotonous groove. Much recent kinetic work has entered history instantly, contributing little or nothing to change contemporary sensibility. Neither the polishing-up of old techniques nor the discovery of new ones can disguise opportunism, conventionality and submissiveness to market forces.

Jack Burnham calls kineticism 'the unrequited art', a medium with a 'long history of aesthetic, technical, and financial failure' but which none the less 'promises hope of open-ended discovery'.

Art documents of the last hundred years are full of philosophizing about movement. I think any aesthetic that concentrates on movement alone is bound to be unsatisfactory, just as is any aesthetic that concentrates on light or on colour. Maurice Merleau-Ponty the philosopher argued in *La Phénoménologie de la Perception* against any theory of movement abstracted from our total experience of space and time:

Movement is a modulation of an already familiar milieu, and brings us back once more to our central problem, which is to know how this milieu, which serves as a basis for every act of consciousness, is constituted. If one accepts this view, then kinetics in art is a

pseudo-subject. The question is further complicated by modern science's discovery that *everything* is in movement at a micro-level, and by the proposition that there are no objects in the universe, only interacting events and processes.

The idea of transformation in time is a more precise one than that of movement, and offers, I think, a hope of re-orienting the theory of kinetic art towards a more rigorous understanding. The term 'transformation' or simply 'change' comprehends the idea of movement, but includes also events in time where something different from movement is perceived – for instance, the brightening or dimming of a light, or a change of colour.

The idea of transformation is a basic one. Nothing could be more basic. But it takes us to the core of some of the most powerful intellectual disciplines of today. A new style of thinking that has developed over the last twenty-five years known as cybernetics or general systems theory concerns itself fundamentally with the transformations undergone by systems in time. An exact notation and mathematics exist for the description of different types of transformation, regardless of the physical characteristics of a particular system. In a 'determinate' system, each state the system is at will determine a unique state to which it will go next. In a non-determinate system, each state, instead of being transformed to a particular new state, may go to one of several possible states. Mathematical notations of probability may be used to describe cases where the

selection of new state is made by some process or method that gives each possible state a constant probability of occurring. An outline of this notation may be found in W. Ross Ashby's *An Introduction to Cybernetics*.

There is little doubt that cybernetics and general systems theory have given us a single vocabulary and set of concepts for discussing the most diverse types of system. This is the minimum claim that can be made for them: that they provide a common interdisciplinary language, at the core of which is the idea of transformation.

Two important disciplines with wide human relevance have been given a new lease of life by the injection of the idea of transformation: linguistics and ecology.

Linguistics, a previously dusty subject, has been revolutionized by Noam Chomsky and a few others. A recent *Times Literary Supplement* reviewer (18 June 1970) writes that even though 'transformational generative linguistics is in a state of considerable crisis', and 'there is growing support for the idea that so fantastically complex and dynamic a phenomenon as language will not yield to any single system of formalization, however resourceful and mathematically seductive', none the less: *There can be no doubt that Chomsky's work has placed linguistics very near the centre of les sciences de l'homme, and that it has done so by articulating ... the unique genius of the species.*

It seems likely that language processes are involved in our

perception of apparently non-linguistic phenomena far more than we normally realize, and that linguistics has much to offer other disciplines.

At a simple level, Chomsky's logical formalization of 'phrase structure grammar', known as the re-write model, uses a transformational notation. (In a rule like 'Sentence → Noun Phrase + Verb Phrase', the arrow is interpreted as an instruction to replace or re-write 'Sentence' by the string of elements that occur to its right.) At a deeper and more controversial level, Chomsky has proposed a 'transformational grammar' whereby transformations are performed not just on individual elements, but on structured strings of elements.

It is interesting to note that one of Chomsky's most original contributions has been to draw on an abstruse branch of mathematics called automata theory, which underlay the development of practical computing devices after World War 2. Its best-known exponent was A. M. Turing. Yorick Wilks, writing in the *Listener* (10 July 1969) suggests that: '... Chomsky's has always been a cybernetic task rather than a strictly linguistic one.' Jack Burnham and Gustav Metzger, writing on kinetic art, have rightly stressed the continuity between twentieth-century kinetic art and the history of automata, Metzger observing that: *Twentieth-century kinetic art developed in a self-imposed insulation from a tradition going back at least three thousand years. In part, this was a form of self-protection – kinetic art had in the past achieved works that*

dwarf the scale and mechanical ingenuity of most twentieth-century efforts. But as yet no one has adequately described the full cultural significance of automata. Not only did they figure in the early history of modern philosophy, for instance in Descartes and Leibniz, but they are the direct ancestors of twentieth-century control systems and computing and information-handling devices – all basically devices for operating on, or transforming, inputs. Many people are interested today in relating computers and cybernetics to art – there is an active Computer Arts Society in England – and though most work in this field to date is distressingly superficial it will surely be a focus of creative activity over the next few decades.

It is likely that the evolutionary success of man owed much to his facility for language, giving form and meaning to the flux of experience. Syntax permits us to 'model' (in the mathematical sense) with adequate complexity the dynamic relationships and processes of our environment. There are some literary critics who have given attention to this power of syntax, though it has not yet been disentangled, and probably never will be, from the other resources of language, notably semantics. Donald Davie the poet and literary critic published in 1955 a stimulating, if pre-Chomskyan, 'inquiry into the syntax of English poetry' called *Articulate Energy*. Davie quotes from an essay, discovered by Ezra Pound, by the orientalist Ernest Fenollosa (who died in 1908): *The sentence form was forced upon primitive men by nature itself. It*

was not we who made it; it was a reflection of the temporal order in causation. All truth has to be expressed in sentences because all truth is the transference of power. The type of sentence in nature is a flash of lightning. It passes between two terms, a cloud and the earth. No unit of natural process can be less than this. All natural processes are, in their units, as much as this. Light, heat, gravity, chemical affinity, human will, have this in common, that they redistribute force.

Fenollosa went on to argue that the transitive sentence is the uniquely poetic, because uniquely truthful, syntactical form.

Fenollosa's idea of 'transference of power' has clearly nothing to do with the transformational grammar of modern linguistics. I would argue that his term brilliantly defines the fundamental energetics of syntax as a 'model' of natural processes. But it now appears naive both linguistically and scientifically.

The second discipline I want to mention that has been refreshed by the idea of transformation is ecology. Until fairly recently, biology gave most of its attention to the study of individual organisms. Ecology is to do with life-processes, energy transformations and resource utilization at a super-organismic level. Though traditionally regarded as a sub-set of biology, it may be legitimately regarded as a kind of super-biology, taking in the whole question of relationships between animals, plants and inanimate nature. In considering human ecology we cannot ignore the 'technosphere' that man has imposed on nature – for instance, inventions like the motor-car, the aeroplane and the computer. Nor can human ecology ignore social and cultural institutions.

Where human artefacts are concerned we are dealing with entities that are not

self-sufficient but depend on continuous refreshment or re-creation from their environment, that is ourselves. As Merleau-Ponty writes: *The relationship between things or between the aspects of things being always mediated by our body, the whole of nature is the mise en scène of our own life or our interlocutor in a sort of dialogue. That is why in the last analysis we cannot conceive of a thing which is not perceived or perceptible. As Berkeley said, even a desert that is never visited has at least one spectator, which is ourselves when we think about it, that is to say when we make the mental experiment of perceiving it. . . . All perception is a communication or a communion, the taking up or achievement by us of an alien intention, or conversely the external fulfilment of our perceptual powers, and as it were a coupling of our body with things.*

Elsewhere in *La Phénoménologie de la Perception*, he writes, 'Nos sens interrogent les choses et . . . elles leur répondent.'

Art, like life, is a manifestation of high organization. I believe the old analogy between works of art and organisms is a very valid one. Ecologically speaking, the coupling of our body with an artefact is a kind of symbiotic relationship, that is a system of mutual life support. Men need art for the satisfaction of those needs which raise us above the level of beasts or automata. An artefact requires not merely the presence of human beings, with our unique psycho-physiological apparatus, if it is to continue to communicate as it was 'programmed' to by the artist (otherwise it is 'like a sun-dial in a grave'). It also requires, if it is to thrive properly, an environment which we call a 'culture', where the connectivity among people and artefacts is immensely rich.

Symbiosis, like all ecological relationships, is a matter of processes and transformations in time. The introduction of a

kinetic element into the visual arts of this century, both through kinetic art so-called and through such media as cinema and television, has merely provided a new explicit emphasis. Frank Popper is right to stress the element of time in all art, though this is more obvious in music and literature than in the visual arts. He quotes a beautiful sentence by Sartre: 'The literary object is a strange kind of top, which only exists in motion.'

In this context, kineticism as an aesthetic seems somewhat obsessional. The unrelenting rotation of turn-tables is inarticulate energy, rather than articulate.

A development of the idea of the three-dimensional work in motion has been the artefact whose own states are transformed in response to inputs from the spectator (and sometimes to random inputs). The phrase 'man/machine symbiosis' being already current, I have described as 'symbiotic art' the use of electronic systems to introduce this extra element of participation, and break down the repetitiveness of purely cyclical machines. (Articles in *Studio International*, March and June 1969, discuss the cybernetic work of Tsai Wen-Ying, John Lifton and Adrian Nutbeem in this context.) Professor Robert Mallary, in the May 1969 issue of *Artforum*, uses the term 'transductive art' – derived from electronic 'transducer' – to convey the same idea, and I prefer to follow his usage.

Transductive art overrides such terms as 'environmental sculpture' and 'music', but it is best regarded at present as a research discipline rather than an art form. It may be formally defined as 'the initiating of certain physical processes which are analysed so that energy inputs can be transformed into energy outputs

by means of a logical switching or programme. Some at least of the initial inputs derive from human behaviour, and the ultimate outputs are within the range of human perception, so that an interaction between the human organism and the environment is established, analogous to symbiosis in nature.' Sound and light are the most obvious physical processes to experiment with, since both can be exactly measured and standard electronic equipment already exists for the researcher to use. There is no reason why other processes such as heat, smell, wireless waves, infra-red rays and so on should not be used, and some of these are already being explored. The human organism cannot of course respond to stimuli outside certain limited ranges, such as the visible spectrum. Equally important, some physical processes – such as very loud noise and low-frequency strobe-flashing – will be avoided for peaceful purposes as they are dangerous to human beings.

Mallary is disturbed by the arbitrariness of the 'logic' in most transductive systems made so far. What does it mean to analyse the frequency of light-waves and 'translate' them into sound-waves, or vice versa, when the physical processes themselves, and the human apparatus for dealing with each, are so very different?

... The computer can be expected to play a role in the syntax of intermedia translation, mediating the transductive transfer from the one source medium (sound) to the receptor medium (light) in order to achieve a meaningful, structured transfer of information – assuming, of course, that the kinetic sculptor is interested in syntactic coherency, holding this to be essential to good art. In fact, I propose this issue of structured-versus-unstructured transduction as one to which all who are involved in any form of transductive art, or who are using transductive processes in multi-media light-and-sound

environments, should give some thought.

The 'syntactic coherency' called for by Mallary is exactly the 'articulate energy' of Davie's definition.

Some artists will prefer to ignore computers and electronic devices, however rich their potential, and will go back to the automatic transformation processes inherent in nature. Metzger writes of 'material-transforming art', and has used himself such materials as cholesteric liquid crystals. These rather freakish substances respond to specific temperature changes in the environment – in Metzger's work, to the heat of light projected through them – with a gradient of iridescent colour changes, due to multi-layered optical interferences at a molecular level. Why use complicated machines, it might be asked, when nature's automatism is cheaper and more reliable? This applies not merely to exotic materials like cholesteric liquid crystals but to the more homely things like water, ice and air – media which have already been extensively used in a kind of alternative kinetic tradition which depends less on motors and machinery.

Among the artists I mean are Hans Haacke, David Medalla, Marcello Salvadori, Kosice and Lilliane Lijn. Here, too, the work of Hans Jenny with vibrating membranes should be mentioned, since though they are usually driven electro-mechanically his primary interest is in the structure and dynamics that different materials exhibit when vibrated – another type of articulate energy.

The use of biological media has been attempted by only a few artists, like Haacke. Gardens, aquaria, aviaries etc. are popular forms of hobby or self-expression which modern artists have hardly yet embraced. On a larger geographic scale, more and more

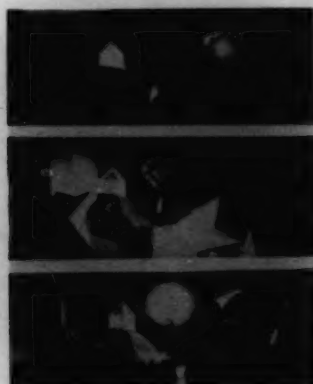
artists will surely apply their powers of articulation to various aspects and implications of the world ecological crisis. Any art that glorifies physical technology and a mechanistic world-view – as much kinetic art seems to do – is seriously inappropriate today. A reorientation towards nature, what F. R. Leavis the literary critic has called 'a kind of reverent openness before life', seems indispensable. Our whole society and ecology (in the widest sense) is at an unprecedentedly high level of complication, requiring from art a corresponding level of organization and energy articulation. Leavis wrote in 1932 'The more important poetry of the future is unlikely to be simple.' The same must be true of all art.

Kinetic art to date will be seen by artists of the 1970's as a powerful springboard, valued less for its own rhythms and oscillations than for its propulsive force, whereby such distractions as the dead-end kids of Conceptual Art can be left behind to splash and piddle in a stagnant art-world.

HISTORY OF KINETICS



Jules-Etienne Marey: Chronograph of figure doing standing jump, 1885



Giacomo Balla: Stage set for 'Fireworks', 1917



Vladimir Tatlin: Maquette for Monument to the 3rd International, 1920.



Liubov Popova: Stage set for 'The Magnificent Cuckold', 1922.



Marcel Duchamp: Rotorelief, 1925



Oscar Schlemmer: Metallic Dance 1927



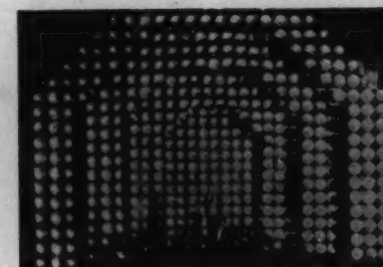
Umberto Boccioni: Unique forms of continuity in space, 1913



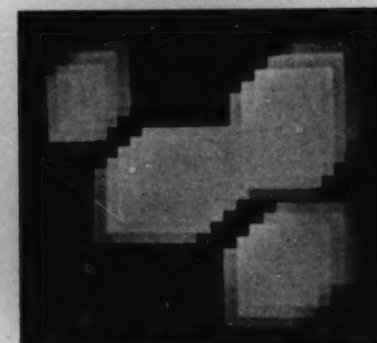
Naum Gabo: Kinetic sculpture, 1920



Vladimir Tatlin: Le Tatlin, c. 1930.



Francis Picabia: Set for Relâche, 1924



Ludwig Hirschfeld-Mack: Colour light play, 1924.



Laszlo Moholy-Nagy: Space Modulator in perspex with mirroring plane, 1940.



Fortunato Depero: Motorumori Sculpture Complex, 1916



Naum Gabo and Antoine Pevsner: Stage set for 'La Chatte', 1926



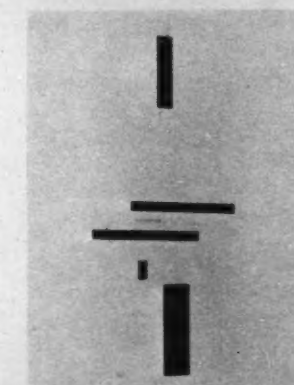
Alexander Rodchenko: Hanging Construction, 1920.



Man Ray: Paper Spiral, 1920



Laszlo Moholy-Nagy: Light-Space Modulator, 1922-23



Bruno Munari: Macchina Inutile, 1945, painted wood and nylon thread

BIBLIOGRAPHY OF KINETICS

BY CAROLINE TISDALL

Ever since the invention of the wheel, movement has been one of mankind's compulsive concerns. Histories of kinetics have been compiled of references to sun-worship, ancient Greek temples, Javanese shadow puppets, fireworks etc. For the sake of clarity the works illustrated in this exhibition have been limited mainly to developments in the late nineteenth-century, when colour theories and photographic researches were applied to painting and sculpture, and to the first three decades of this century. From 1910 onwards programmatic use was made of the new technical possibilities and materials available to the twentieth-century artist, particularly by the Italian Futurists, the Russian Constructivists, and by members of the Bauhaus, notably Moholy-Nagy and Schlemmer. Dadaists and Surrealists, like Duchamp, Picabia, Man Ray, and occasionally Ernst and Giacometti, made more elusive use of movement, exploiting its poetic, punning and dislocating potential, continued by the mobiles and 'useless machines' of Calder and Munari in the 1930's. Experiments extended over many media to include colour organs, moving stage sets, mobiles and animated films, and were copiously documented by manifestos, some of which are included here. Today the technical scope is obviously wider, but by and large kinetics still fall into two categories, descending on one hand from Constructivism and on the other from Dadaism and Surrealism.

Caroline Tisdall

GENERAL

- Mon, Franz: *Movens*, Limes Verlag, Wiesbaden, 1960.
- Wember, Paul: *Bewegte Bereiche der Kunst*, Krefeld, 1963.
- Signals Bulletins, London, August 1964-March 1966. (Articles on Camargo, Clark, Cruz-Diez, Lijn, Medalla, Oiticica, Schendel, Soto, Takis, etc.).
- Kepes, György: *The Nature and Art of Motion*, Studio Vista, London, 1965.
- Metzger, Gustav: *Auto Destructive Art*, Architectural Association, London, 1965.
- Bann, Gadney, Popper, Steadman: *4 essays on Kinetic Art*, Motion Books, London, 1966.
- Image Magazine, 1966.
- Studio International Kinetics edition, London, February, 1967.
- Rickey, George: *Constructivism*, Braziller, New York, 1967.
- Compton, Michael: *Optical and Kinetic Art*, Tate Publications, London, 1967.
- Hill, Anthony: *Data*, Faber & Faber, London, 1968.
- Popper, Frank: *Origins and Development of Kinetic Art*, Studio Vista, London, 1968 with extensive bibliography.
- Brett, Guy: *Kinetic Art, the Language of Movement*, Studio Vista/Reinhold, London, 1968.
- Benthall, Jonathan: *Art and Technology*, Articles in Studio International, London, 1969-70.

HISTORICAL

- Chevreur, Michel Eugène: *De la Loi du Contraste Simultané*, Pitois-Levrault, 1839.
- Marey, Etienne-Jules: *Du Mouvement dans les Fonctions de la Vie*, Germer Baillière, 1868.
- Marey, Etienne-Jules: *La Machine Animale*, 1873.
- Pettigrew, James Bell: *Animal Locomotion*, Henry S. King & Co, London, 1873.
- Rood, Ogden Nicholas: *Modern Chromatics*, Kegan Paul & Co, London, 1879.
- Sutter, David: *Les Phénomènes de la Vision*, 'L'Art', February-March 1880.
- Souriau, Paul: *De Motus Perception*, Hachette, Paris, 1881.
- Souriau, Paul: *L'Esthétique du Mouvement*, 1889.
- Bainbridge, Bishop: *A souvenir of the Colour Organ*, de Vinne Press, New York, 1893.
- Technical Manifesto of Futurist Painting, 1910.
- Rimington, Alexander Wallace: *Colour Music*, Hutchinson, London, 1911-12.
- Boccioni, Umberto: *Technical Manifesto of Futurist Sculpture*, 1912.
- Appia, Adolphe: *Rhythmic Spaces*, 1912.
- Kandinsky, Wassily: *On the Spiritual in Art*, 1912 (translated in Documents of Modern Art, Wittenburn, New York).
- Survage, Léopold: *Rythmes Colorés*, Les Soirées de Paris, July-August 1914.
- Depero, Fortunato and Balla, Giacomo: *Futurist Reconstruction of the Universe*, 1915.
- Lewis, Wyndham: *Catalogue of Vorticist Exhibition*, Doré Gallery, London, 1915.
- Gabo, Naum and Pevsner, Antoine: *Realist Manifesto*, Moscow, 1920 (translated in 'Gabo' by H. Read and L. Martin, Lund Humphries, 1957).
- Mondrian, Piet: *Neo-Plasticism*, 1920.
- Moholy-Nagy, Laszlo and Kemeny, Alfred: *Dynamisch-Konstruktives Kraftsystem*, Manifesto, Der Sturm, December, 1922.
- Moholy-Nagy, Laszlo: *Photography, Painting, Film*, Munich, 1925.
- Klee, Paul: *Pedagogical Sketch book*, 1925.
- László, Alexander: *Die Farblichtmusik*, Leipzig, 1925.
- Hirschfeld-Mack, Ludwig: *Farbenlichtspiele*, Weimar, 1925.
- A. B. Klein, *Colour Music*, Crosby, Lockwood & Son, London, 1926 (3rd edition: *The Art of Coloured Light*, 1937).
- Malevich, Kasimir: *The Non-Objective world*, 1927.
- Moholy-Nagy, Laszlo: *The New Vision*, New York, 1930.
- Gabo, Naum: *Essay in 'Circle'*, London, 1937.
- Mondrian, Piet: *Plastic Art and Pure Plastic Art*, New York, 1945 (reprinted in 'Modern Artists on Art', Prentice Hall, 1964).
- Moholy-Nagy, Laszlo: *Vision in Motion*, Chicago, 1947.
- Wilfred, Thomas: *'Light and the Artist', 'Composing in the Art of Lumia'*, Journal of Aesthetics, June 1947 and December 1948.
- Schwerdtfeger, Kurt: *Bildende Kunst und Schule*, Hanover, 1953.

Gombrich, E. H.: *Moment and Movement in Art*, Journal of the Warburg and Courtauld Institute, 1964.

Scharf, Aaron: *Art and Photography*, London, 1968.

(For bibliography of *Automata and movement in the Ancient World* see Metzger, Gustav: *Studio International*, March 1969 and October 1969.)

EXHIBITION CATALOGUES

- 1955 Le Mouvement (Yellow Manifesto), Galerie Denise René, Paris.
- 1960 Kinetische Kunst, Kunstgewerbemuseum, Zurich.
- 1960 GRAV 'Propositions sur le mouvement', Galerie Denise René, Paris.
- 1961 Bewogen Beweiging, Stedelijk Museum, Amsterdam. Moderna Museet, Stockholm.
- 1962 Arte Programmata, Olivetti, Milan.
- 1963 Bewegte Bereiche der Kunst, Kaiser Wilhelm Museum, Krefeld.
- 1964 Arte Programmata, Olivetti, Milan.
- 1964 Bewegung, Gimpel & Hanover Gallery, Zurich.
- 1964 Nouvelle Tendance, Musée des Arts Décoratifs, Paris.
- 1964 Mouvement 2, Galerie Denise René, Paris.
- 1965 Art and Movement, Scottish Arts Council, Edinburgh and Glasgow.
- 1965 Art and Movement, Museum of Tel-Aviv.
- 1965 Art Turned On, Institute of Contemporary Art, Boston.
- 1965 Licht und Bewegung, Kunsthalle, Bern; Palais des Beaux-Arts, Brussels; Kunsthalle, Baden-Baden; Kunsthalle, Düsseldorf.
- 1965 Kinetische Kunst uit Krefeld, Gemeente Museum, The Hague.
- 1965 The Responsive Eye, Museum of Modern Art, New York.
- 1965 Kinetic and Optic Art Today, Albright-Knox Art Gallery, Buffalo.
- 1965 Current Art, Institute of Contemporary Art, Philadelphia.
- 1966 Kunst-Licht-Kunst, Stedelijk van Abbe Museum, Eindhoven.
- 1966 Directions in Kinetic Sculpture, University of California, Berkeley.
- 1966 Light in Art, Museum of Contemporary Art, Houston.
- 1966 Sound, Light, Silence, William Rockhill Nelson Gallery, Kansas City.
- 1966-67 In Motion, Arts Council of Great Britain.
- 1967 La Luce, Galeria Dell'Obelisco, Rome.
- 1967 Luminism: Light-Motion-Space, Walker Art Centre, Minneapolis.
- 1967 Lumière et Mouvement, Musée d'Art Moderne de la Ville de Paris.
- 1968 Cybernetic Serendipity, Institute of Contemporary Arts, London (a special issue of *Studio International*).
- 1969 The Machine, Museum of Modern Art, New York.

FROM MANIFESTOS

1912

UMBERTO BOCCIONI

Extract from 'Technical Manifesto of Futurist Sculpture':

We must not forget that the tick-tock and the movement of the hands of a clock with the rise and fall of a piston in its cylinder, the meshing and unmeshing of two gears with the continual disappearance and reappearance of their little steel rectangles, the frenzy at a flywheel, the whirl of a propeller, all these are plastic and pictorial elements of which Futurist sculptural work must make use. For example, a valve opening and closing creates a rhythm as beautiful, but infinitely newer than that of a living eyelid.

1915

GIACOMO BALLA AND FORTUNATO DEPERO

Extracts from 'Futurist Reconstruction of the Universe':

The first plastic dynamic complex will be:

1. Abstract.
2. Dynamic. Relative motion (cinematographic) + absolute motion.
3. Very transparent. For the speed and volatility of the plastic complex, which must appear and disappear, very light and intangible.
4. Highly coloured and most luminous (using internal lights).
5. Autonomous, that is, resembling only itself.
6. Transformable.
7. Dramatic.
8. Volatile.
9. Odorous.
10. Noisy. Plastic noise simultaneous with plastic expression.
11. Explosive. Appearing and

disappearing simultaneously with explosions.

Necessary Means: coloured wires of every thickness, of metal, wool, silk; coloured glass, tissue paper, celluloid, metal net, all sorts of highly coloured transparent materials, glass, metal laminates, coloured metal paper and all sorts of dazzling materials; mechanical, electronic, musical and noisy units, chemically luminous liquids of variable colours, springs, levers, tubes etc. With these means we will construct:

1. Plastic complexes that rotate on an axis (horizontal, vertical, oblique).
 2. Plastic complexes that rotate on more than one axis:
 - a) in the same direction, at varying speeds;
 - b) in contrary directions;
 - c) in both the same and contrary directions.
 3. Plastic complexes that decompose themselves:
 - a) in volumes;
 - b) in layers;
 - c) in successive transformations in the shape of cones, pyramids, spheres etc.
 4. Plastic complexes that decompose, talk, make loud noises and play simultaneously.
 5. Plastic complexes that appear and disappear:
 - a) slowly;
 - b) in repeated bursts (in scales);
 - c) with unexpected explosions.
- Pyrotechnics - water - fire - smoke.

1920

BY NAUM GABO

Extracts from 'Realist Manifesto':

We know that everything has its own essential image: chair, table, lamp, telephone, book, house, man... they are all entire worlds with their own

rhythms, their own orbits. That is why we, in creating things, take away from them the labels of their owners... all accidental and local, leaving only the reality of the constant rhythm of the forces in them.

We affirm that the tone of a substance, i.e. its light absorbing material body, is only its pictorial reality.

We affirm the line only as a direction of the static forces and their rhythm in objects.

We affirm depth as the only pictorial and plastic form of space.

We affirm in these arts a new element, *Kinetic rhythms* as the basic forms of our perception of real time.

Look at a ray of sun... the stillest of the still forces, it speeds more than 300 kilometres in a second... behold our starry firmament... who hears it... and yet, what are our depots to those depots of the Universe? What are our earthly trains to those hurrying trains of the galaxies?

We say...

Space and time are reborn to us today.

Space and time are the only forms on which life is built, and hence art must be *constructed*. States, political and economic systems perish, ideas crumble under the strain of ages... but life is strong and grows and time goes on in its real continuity.

1925

LASZLO MOHOLY-NAGY

Extract from 'Painting, Photography and Film' on Ludwig Hirschfeld-Mack's 'Reflected Colour Displays':

First to reveal a profusion of the most delicate transitions and unexpected variations of

coloured planes in motion. A movement of planes, prismatically controllable, which dissolves, conglomerates, resembling the colour organ in character. The establishment of a new space-time dimension of radiating light and controllable movement becomes even clearer in his spinning and plunging bands of light. (From section 'Static & kinetic optical composition'.)

1930

LASZLO MOHOLY-NAGY

Extract from 'The New Vision':

The five evolutionary stages of sculpture:

1. Blocked out form.
2. Modelled out form.
3. Open or perforated form and assembled construction.
4. Form in equipoise.
5. Kinetic sculpture.

Sensual apprehension of form has been overtaken by an intellectual grasp of form; cultural stylistics giving way to burgeoning technology. At the Bauhaus in the 1920s we had considered magnetic force and remote electrical control for invisible power sources. The first projects looking towards the dynamic-constructive system of forces can only be experimental, demonstrating devices for the testing of the relations between man, material, power and space. Next comes the utilization of experimental results for the creation of freely moving (free from mechanical and technical movement) works of art.

KINETICISTS OF THE PLANET EARTH!

MANIFESTO OF THE RUSSIAN KINETICISTS COLLECTIVE 'DVIJZENIE'

МАНИФЕСТ РУССКИХ КИНЕТИСТОВ

(коллектив "ДВИЖЕНИЕ")

ПЛАНЕТА ЗЕМЛЯ, КИНЕТИСТЫ!

- МИР СЕГОДНЯ: "Требую своих форм и символов!"
- В XX веке ТЕХНИКА обогнала ИСКУССТВО с НАУКОЙ.
- Человек СЕГОДНЯ: "Абсолютную свободу ФАНТАЗИИ, людей!"
- ФАНТАЗИЯ говорит: "Дайте новый инструмент - средство и в передаче и в творчестве."
- ДРЕВО НАУКИ растет много новых ветвей, ДРЕВО ИСКУССТВА - ОДИН ЛИШЬ ЛЕТО.
- КИНЕТИЗМ - ПЛОД многих ветвей.
- ОДИНУ НЕ ОХВАТИТЬ. Дать охватить, если один, - охват!
- КРЕК КИНЕТИЗМА - КИНЕТ.
- КИНЕТ - это один и много. Он - и личное и коллективное!
- МИР СКАЗАЛ: "Человек, если ты не один за себя, то кто за тебя? Но если ты только для себя - что ты?"
- Мир СЕГОДНЯ: "Люди, отчего вы еще не братятся? Ведь у вас есть ИСКУССТВО..."
- СЕГОДНЯ - музыканты, писатели, актеры, архитекторы, поноваторы, инженеры, социологи... и поэты - ЗАВТРА КИНЕТИСТЫ.
- Новое качество в искусстве родилось КОЛЛЕКТИВНОМ.
- Мы создаем вместе такое искусство, которое один невозможно сделать.
- ВЗАИМОДЕЙСТВИЕ - ВЗАИМОДЕЙСТВИЕ - ПРОБЛЕМА КИНЕТИЗМА (Человек АРТИСТ) (Человек НАУКА и Техника) искусства)
- ИНЖЕНЕР, что ты сделал для ПРЕКРАСНОГО? "Человек ИСКУССТВА (АРТИСТ), как совершенствуешь ИНСТРУМЕНТ искусства?"
- "Мир, тебе предлагаю искусство ДУХА, МА и ТЕЛА".
- КИНЕТИЗМ - искусство раскрытия тайн жизни и Претворения.
- Близится, близится Эра РЕАЛЬНОГО ИСКУССТВА, время всеобщего творческого познания искусством. Эра КИНЕТИЗМА придет!

- КИНЕТИЗМ планета ЗЕМЛЯ, в наших руках величайшее духовное дело!
- КИНЕТИЗМ - это не только новая форма искусства, и даже не только новый вид искусства, но это новое, творческое отношение к Миру, к Человеку!
- Нет искусства вне Человека и без Человека. Мы - пионеры. Приобщим к МИР к КИНЕТИЗМУ!
- Человек СЕГОДНЯ разорван, болен. "Человек, ты не устал от разрывов?"
- Ребенок СЕГОДНЯ - уже космическое существо. Звезды стали ближе. Так пусть же ИСКУССТВО объединит людей движением звезд!
- "ЛИНН, ДАВАЙТЕ СОЗДАДИМ ВСЕМИРНЫЙ ИНСТИТУТ КИНЕТИЗМА!" Пусть кинетизм приблизит людей к миру грез и фантазий! Горизонты раздвинем - пусть ЗАВТРА увидят! Внутренний мир души!
- ПОСАДИМ СЕГОДНЯ СЕМИ МИ - ДРЕВО ЦВЕТУЩЕЕ ЗАВТРА ВПРАВИТ!

МОСКВА 1966

ЛЕВ КУСБЕРГ * АЛЕКСАНДР

- СЕГОДНЯ МЫ ПРЕДЛАГАЕМ ПРОЕКТ: СОЗДАТЬ ВСЕМИРНЫЙ ИНСТИТУТ КИНЕТИЗМА!

ЧЛЕНЫ КОЛЛЕКТИВА "ДВИЖЕНИЕ":

КУСБЕРГ	ОРИСВА
ИНСАНТЕ	
КУЗНЕЦОВ	МУРАВЕВА
БЕЛОРУДИН	БИТТ
КОЛЕЧУК	ДУБОВСКАЯ
ЗАХАРОВСКАЯ	СТЕПАНОВ
ГЛАВЧЕНКО	

Translation:

MANIFESTO OF THE RUSSIAN KINETICISTS (collective 'DVIJZENIE')

KINETICISTS OF THE PLANET EARTH!

TODAY'S WORLD: 'I demand my own forms and symbols!' In the 20th century TECHNOLOGY has united ART with SCIENCE. Man TODAY: 'To everyone, absolute freedom of imagination!' IMAGINATION says: 'Give me a new instrument - a means, and I will remake the world.' From the TREE OF SCIENCE springs many new branches, from the TREE OF ART - FORM. 20th century man. KINETICISM - FRUIT of many branches. NOT TO BE GRASPED ALONE. Even the strong, if alone, are weak. PRIEST OF KINETICISM - THE KINETICIST. THE KINETICIST - this is one and many. He is - both personal and collective. THE WORLD SAYS: 'MANKIND, if you are not for yourself then who is for you? But if you are only for yourself - what are you worth?' TODAY'S WORLD: 'Why is it people are not yet united? Surely you have ART...' TODAY - musicians, physicists, actors... architects, psychologists, engineers, sociologists... and poets - TOMORROW KINETICISTS. A new quality in art is being born through the COLLECTIVE. Together we

make this art, which alone it is impossible to do.

INTERACTION ← INTERACTION
Artist Scientist and
Technologist

- KINETIC WORK

'ENGINEER, what have you done for BEAUTY?' 'ARTIST, how are you perfecting the INSTRUMENT of art?' 'WORLD, to you we offer an art of SOUL, MIND and BODY.' KINETICISM - art that reveals the secrets of life and transformation. Nearer and nearer is the era of REAL ART, the time when all mankind will understand through art. The era of KINETICISM is coming! KINETICISTS of the planet EARTH, in our hands is the greatest spiritual task. KINETICISM - not only is this a new form of art, not only even a new aspect of art, but it is a new relation to the world, to mankind, that has been evolving over thousands of years. Outside of man and without man there is no art. We - are pioneers. We unite the WORLD to KINETICISM! TODAY'S man is torn apart, sick. 'Man, are you not tired of destruction?' TODAY'S child - is already the cosmic generation. The stars have come nearer. Then let ART draw people together through the breath of the stars! 'PEOPLE, LET US CREATE A WORLD INSTITUTE OF KINETICISM!' Let kineticism bring life close to the world of dreams and

imagination. We will push apart the horizons - let TOMORROW see it! We will master a new language of the soul. TODAY WE HAVE SOWN THE SEED - TOMORROW WE WILL MAKE THE TREE BLOSSOM!! TODAY WE PROPOSE THE PROJECT: TO CREATE A WORLD INSTITUTE OF KINETICISM!

Moscow 1966. Lev Nusberg. Members of Dvijzenie: Nusberg, Infante, Kusnetsov, Buturlin, Koleichuk, Zanevskaya, Glinchikov, Orlova, Muravieva, Bitt, Dubovskaya, Stepanov.

The Russian DVIJZENIE 'Movement' Group was founded in Moscow, 1962. Their founder is LEV NUSBERG, who was born in Tashkent 1937 and who is the theorist and organizer of this group of Moscow based Kineticists. By 1965 the members of the group included: V. Akulinin (b. 1942), B. Diodorov (b. 1936), V. Galkin (b. 1946), F. Infante (b. 1943), A. Krivcikov (b. 1940), Y. Lopakov (b. 1944), R. Sappirova-Zanevskaya (b. 1932), V. Stepanov (b. 1943), V. Scerbakov (b. 1944). Later the group's personnel varied, including technical collaborators, actors, musicians and additional artists including G. Bitt (b. 1946).

Manifestations in the USSR include: Exhibition of Soviet Kineticists, Leningrad, 1965; Exhibition of Ornament, Central House for Artworkers, Moscow, 1963; 'Towards Synthesis', Young Peoples Club, Moscow, 1964; Exhibition of Kinetic Art, House of Architecture, Leningrad, 1965. The group staged 'Metamorphoses' a kinetic theatrical presentation at The Institute of Atomic Energy, Moscow, 1966. In 1967 the group were responsible for decorations and kinetic manifestations as a part of the celebrations staged in Leningrad for the anniversary of 50 Years of Soviet Communism.

Manifestations abroad include participation in a number of mixed exhibitions of contemporary Soviet art in Prague and Brno, 1965, Heidelberg and Munich, 1966. International showings include: Nova Tendencija 3, Zagreb, 1965; Kunst/Licht/kunst, Stedelijk van Abbe Museum, Eindhoven, 1966.

Writings by Lev Nusberg have been published in Studio International, Aug. 1966: texts from the NT 3 catalogue. Form no.4, 1967: 'What is Kineticism' (1964-65). DATA, Faber & Faber, 1968: 'On action in perception of the world.' Leonardo Vol.1 no.3, 1968: 'Russian Movement Group'. Leonardo Vol.2 no.1, 1969: 'Cybertheatre'.

Gillian Wise



Top: 'Cosmos', Moscow, Leningrad 1966. Artist: Lev Nusberg. Project realized in collaboration with the following members of the 'Dvijzenie' collective: Francisco Infante, Galina Bitt, V. Buturlin, V. Borodin, N. Kusnetsov and others. Size 1800 x 1250 x 1100. Utilizes principle of revolving wheel of light - the lamps are located on the extremities of the spokes. Programmed rhythms are used and in addition an accompanied sound programme was planned consisting of electronic concrete music and short texts about Soviet achievements in space. The whole programme lasted 7.5 minutes.

Above: 'Cosmos' at night, showing last phase of the programme. The wheel is revolving and the programmed lights illuminating periodically in revolution: to give an impression of signals being sent into outer space.



Above: day and night views of 'Atom' Moscow, Leningrad 1966. Artist: Lev Nusberg. Project realized with collaboration from the 'Dvijzenie' collective: Francisco Infante, T. Bistрова, N. Kusnetsov, A. Grigoriev, V. Buturlin and others. Size: Height with stand 850 x 780. This work symbolizes the structure of the atom, the movement and pulsation of materials. It utilizes programmed movement and a colour light system. The three outer orbits have inter-connected but independent rhythms and with the three inner orbits give an impression of pulsating material. It was planned to be viewed with an accompaniment of electronic music, interspersed with texts concerning the achievements of Soviet Physics. The programme was designed to be continuous.

Both works were built in Leningrad in conjunction with the celebrations of 50 years of Soviet Communism.

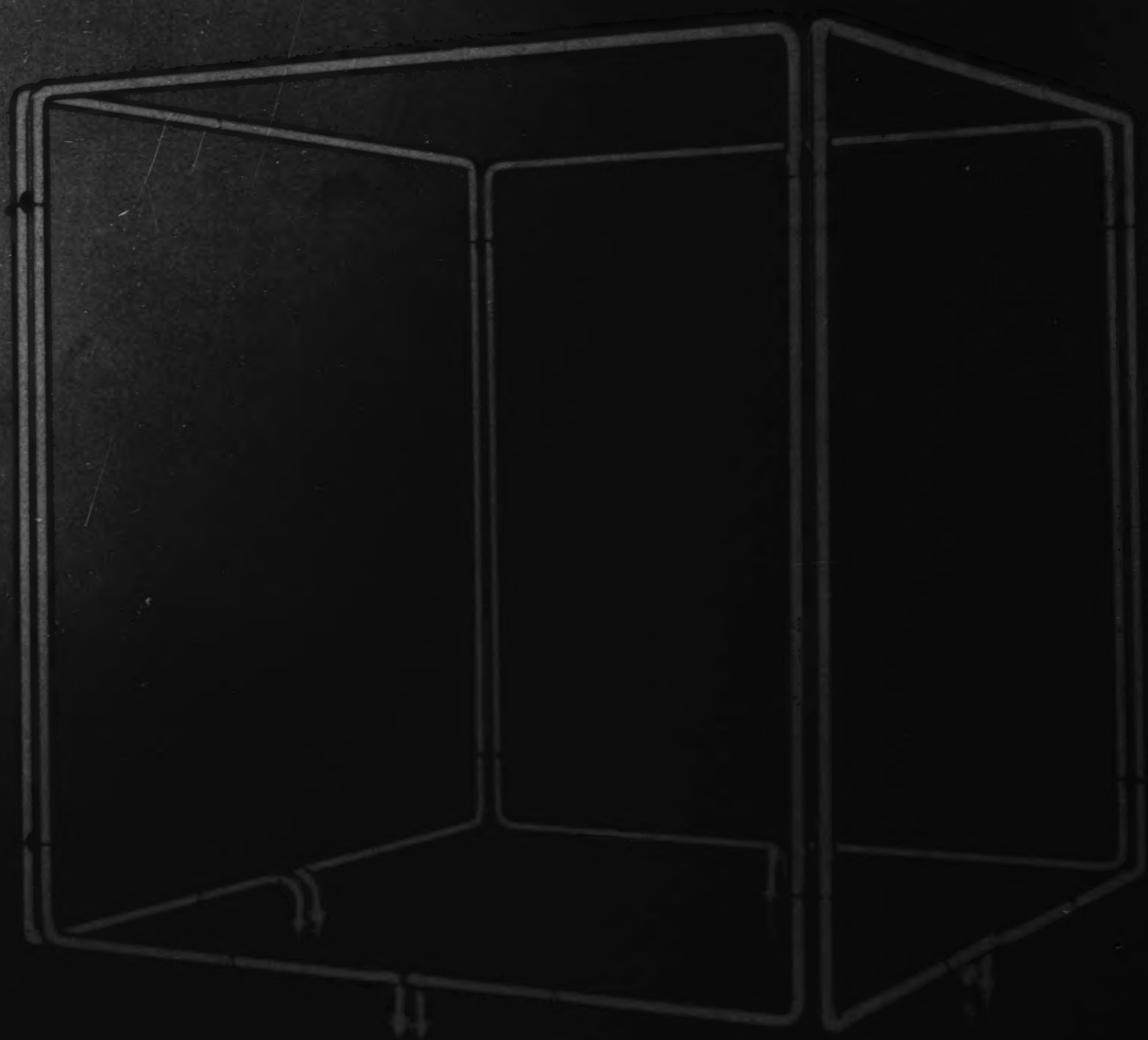
STEPHEN ANTONAKOS



Blue Box, 1965-69
Neon, aluminium base
Size 60 x 60 x 60 (neon alone)
Collection the Artist

Stephen Antonakos was born in Southern Greece in 1926 and emigrated to the US with his family in 1930. He has had one-man shows at the Avant-Garde Gallery, New York and the University of Maine, 1958; The Miami Museum of Modern Art, Schramm Galleries, Fort Lauderdale, Byron Art Gallery, New York, 1964; Fischbach Gallery, New York, 1967, 1968, 1969, 1970; Fort Worth Art Centre, 1970. Works by Antonakos are to be found in many public collections including Whitney Museum of American Art, New York; Larry Aldrich Museum, Ridgefield; Miami Museum of Modern Art; Museum of Modern Art, New York; Albright-Knox Art Gallery, Buffalo; Philadelphia Museum of Art, and in private collections.

Statements by artists can only say what he would hope for, for the work stands for what he really is. Neon tubes are as normal a medium for me as breath is to you. To put the neon tubes in a position that would answer my desires. Neons coming down a wall and along the floor. The action of the tubes going on and off changes my whole expectancy. Neons projecting out from a wall. Each neon piece demands from me its own pattern of going on and off. 6 minutes. Neon lighting shooting up into the sky. Without discipline there is nothing. Neon light is alive to the eye and to the mind. Projecting up from the floor. The selections of the colours dictates the timing. Neons hanging down from the ceiling. Because of the timing, the colours change their relation to each other. 1/32 of a second on and off. Neons coming down and out of a corner. To see the work is better than to read about the work.



FLETCHER BENTON



Rolling Balls, 1969
 Aluminium, perspex, motor
 Size 140 x 25 x 145 high
 Collection Galeria Bonino, New York

Fletcher Benton was born in Jackson, Ohio in 1931. He was educated at Miami University, Oxford (Ohio), and is now Associate Professor at San Jose State College.

He has had one-man exhibitions at the San Francisco Museum of Art, 1965; Esther-Robles Gallery, Los Angeles, 1966 and 1967; Galeria Bonino, New York, 1968 and 1969; Galerie Françoise Mayer, Brussels, 1969; and the Albright-Knox Art Gallery, Buffalo, 1970, and participated in many group exhibitions including International Museum of Fine Arts, Expo 70, Osaka. Works by Fletcher Benton are in many public collections including Whitney Museum of American Art, New York; Larry Aldrich Museum, Ridgefield; University Art Museum, Berkeley.

*At 70 . . . MPH
 Flashes of colour . . . silver . . .
 geometric forms in focus, out of
 focus. The competition for
 sublineal awareness . . . a
 spectacular stage, the Highway.
 These kinetic experiences leave
 their contrails in memory as basic
 forms . . . Detroit and Madison
 Avenue come smashing together
 with colour and chrome.
 Somewhere a man's sensibilities
 are turned on to time and space,
 a fourth visual dimension.
 Nowhere does time stand quiet or
 still . . . noise, lights, speed . . . a
 restlessness has come upon us,
 whether or not. Transparent
 colours join and pass behind one
 another in a manner of
 slowness . . . or of slow motion . . . a
 blur . . . concentrated colour of
 many memories. The width of a
 colour shrinks to a line and then
 disappears to another colour . . . a
 flatness, a change of flatness . . . a
 the element of space and time.*



ALBERTO BIASI



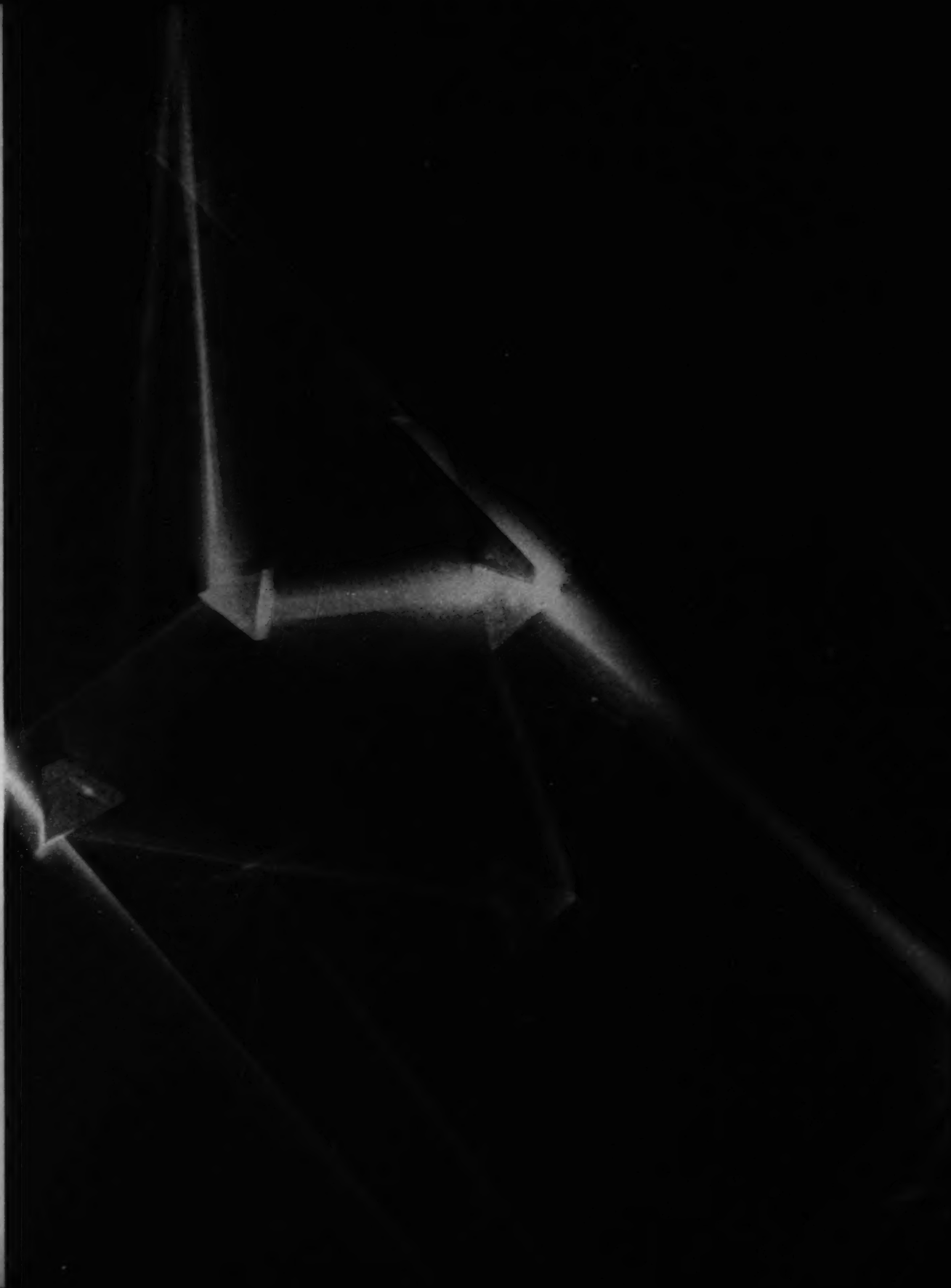
Cinereticolo spettrale No. 4, 1963
Lights, motorized prisms, screen
in timber container
Size 92 x 140 x 25
Collection the Artist

Alberto Biasi was born in 1937 in Padua where he lives and works. He studied architecture and industrial design at the Architectural Institute, Venice, 1958-63. In 1959 he founded the Group ENNE to undertake research in the visual arts. The group made optical/dynamic relief constructions and transformable objects for spectator participation. In 1961 he participated in the international 'Nouvelle Tendance' movement and in 1962 in exhibitions of programmed art using light. In 1965 the Group ENNE 65 was established to conduct research into the perception of unstable objects and environments. The application by the group of computer technology to visual research began in 1968. Alberto Biasi has shown widely since 1960. His works are in public collections in the Museums of Contemporary Art in Belgrade, Bratislava, Lodz, Wroclaw, Ljubljana, Prague, Zagreb; the Museo d'Arte Moderna Ca' Pesaro, Venice; Galleria Nazionale d'Arte Moderna, Rome; Museo Civico, Turin; Museum of Modern Art, New York; Peter Stuyvesant Art Foundation; Olivetti Collection, Milan; Centro Duchamp, Bologna.

In Cinereticolo spettrale No. 4, the varying positions and colourings of the segments are achieved by means of motion activated by electrical devices and diffused light in primary colours with the aid of prisms. On a white square area surrounded by mirrors, there are four revolving prisms, disposed diagonally about 15 cm. from the centre, moving at different speeds, in different directions in an irregular rotating motion. Towards the four prisms converge two rays of diffused light in primary colours by means of two other prisms located at the edges of the square area where the sources of light are situated. The two rays directed onto the four central rotating prisms are constantly reflected and refracted in colours changing from red to violet. The result is that more rays in varied and iridescent colours rotate towards the periphery of the square area and return towards the centre as a result of the reflection in the side mirrors. This work, like other works in kinetic art, provides a continuous series of different images in time.

The art world nowadays presents the striking fact that an artist's work will be valued more highly as the means of producing 'consumer' goods, than as an individual and free activity which, by tradition, should aim at bringing to man the realization of his relationship with his fellow men.

This materialistic aspect of art, the result of the pressing needs created by commercialism, will necessarily have to be denied or altered, particularly as it tends to preserve the concession of the artistic language as a privilege, thus preventing real communication between individuals.



DAVIDE BORIANI

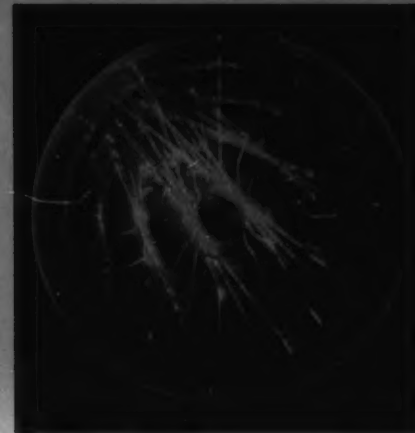


Magnetic Surface, 1959-63
Perspex, iron filings, motor
Size 60 diameter
Collection the Artist

PH Scope, 1964-66
Perspex, lights
Size 75 x 60 x 35
Collection the Artist

Davide Boriani was born in Milan in 1936 and lives and works there. He studied at the Brera Academy, Milan, 1951-60, and was a founder member of the Gruppo T in 1959. He has been an active member of the 'Nouvelle Tendance' since 1962, but ceased to exhibit in 1968 and now works outside the gallery system. He was co-designer of an exhibit in the central pavilion of the Venice Biennale 1970, where he has realized an environment involving distortion of perspective and dimension. Works by Boriani are in the collections of the Museum of Modern Art, New York; the Galleria Nazionale d'Arte Moderna, Rome; and in private collections.

The kinetic environment, like the kinetic object, declines rapidly into the gratuitous, the fashionable. For me the only valid field of activity now is one that is closely linked with reality, with all the political and social involvement this entails.



MARTHA BOTO



Alternance Tri-Optique C, 1968
Perspex, aluminium, motor
Size 124 x 60 x 22
Collection Denise René Gallery,
Paris

Martha Boto was born in 1925 in Buenos Aires, Argentina and lives in Paris. A founder member of the non-figurative group of Argentine artists (ANFA), she has had one-man shows at the Galerie Van Riel and Krayd, 1951-55; Galerie H, Buenos Aires, 1960; Denise René, Paris, 1960 and 1969. She has participated in a number of group exhibitions of kinetic art in Europe and Canada and the USA. Her works in public collections include the Museum of Fine Arts, Buenos Aires; Musée d'Art Moderne de la Ville de Paris; Milwaukee Museum; Rembrandt Art Foundation, South Africa.

The use of light, colour and mechanical movement has revealed new aesthetic horizons to me, and they will enrich our lives today in a number of different ways.



ROBERT BREER



Rug No.3, 1970

Mylar sheet on mechanical
'tank'

Size 60 x 120

Collection Galeria Bonino, New
York

Robert Breer was born in Detroit, Michigan in 1926 and graduated from Stanford University in 1949. He moved to Paris and showed in group shows at the Denise René Gallery, 1950-55. He had one-man shows of his paintings and films at the Palais des Beaux-Arts, Brussels and the American Student Centre, Paris in 1956. He returned to the USA in 1959 and showed his films at the Gallery Mayer, New York in 1960. Since then he has regularly shown his films, and exhibited kinetic sculptures in group shows, with one-man shows at the Bonino Gallery, New York in 1965 and 1966. Works by Robert Breer are in public and private collections, including the Moderna Museet, Stockholm.

My self-propelled pieces move about slowly probing the outer limits of their environment and adjusting to formal incidents along the way. In this respect they imitate the very process that helped to conceive them.

POL BURY



182 Balls on Two Opposed
Planes, 1967
Wood, motors
Size 240 x 120 x 60
Collection Monsieur Aimé
Maeght, Paris

Pol Bury was born in 1922 at Haine-Saint-Pierre, Belgium and studied at the Académie des Beaux-Arts, Mons. He joined *Rupture*, an experimental Surrealist group founded by the poets Achille Chavée and André Lorent in 1939. He participated in the 1945 Brussels International Exhibition of Surrealism and became a member of the Jeune Peinture Belge Group in 1947. In 1949 he met Christian Dotremont and Pierre Alechinsky and worked with the Cobra group until 1951. Until 1953, when he gave up painting, he showed widely in Belgium and the rest of Europe. In that year he exhibited the 'Plans Mobiles', and instituted, with André Balthazar, the Académie de Montbéliard. He participated in the Mouvement exhibition at the Denise René Gallery in 1955, with Agam, Calder, Duchamp, Jacobsen, Soto, Tinguely and Vasarely. In 1957 he began to use electric motors in his work and from this date developed the slow, almost imperceptible movement which is characteristic of his work. Since then he has had a one-man show at the Iris Clert Gallery, Paris, 1962 and a large retrospective show at the University Museum, Berkeley, California will tour US galleries this year, ending at the Guggenheim Museum, New York. He has participated widely in group shows in Europe and the US. Bury is also known for his 'Cinetisations', a series of dislocated photographic prints first shown in 1964. His works are in numerous public and private collections in Europe and USA, including the Tate Gallery, London.

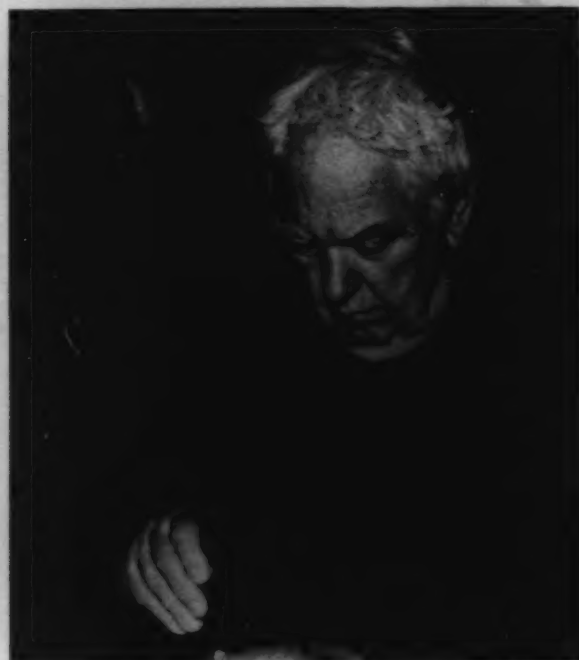
Between the immobile and mobility, a certain quality of slowness reveals to us a field of 'actions' in which the eye is no longer able to trace an object's journeys. Given a globe travelling from A to B, the memory we shall retain of its point of departure will be a function of the slowness with which it achieves its journey. Our eye, our memory have lost the memory of A. Only the quality of slowness allows it to obliterate its own tracks, to be an eraser of memory, to make us forget its past.

Two globes on the scale of slowness: it is air, fire, earth and water which bear the weight of their measure.

Extracted from 'Time Dilates'
by Pol Bury, Studio
International, June 1965.



ALEXANDER CALDER



Poissonnagerie, 1969
Steel
Size 145 x 200
Collection Monsieur Aimé
Maeght, Paris

Alexander Calder was born in 1898 in Philadelphia, USA. He studied engineering in New York and took design and art courses. From 1926 he was often in Paris where he became known in the literary and artistic milieu by presenting a miniature circus made of wire. His first exhibition of sculpture, christened 'mobiles', took place in Paris in 1932. Since then he has produced constructions, 'stables', ballet scenery, jewellery, 'constellations' in wood and steel wire. The Museum of Modern Art in New York devoted a large retrospective to him in 1943 and he was awarded the Grand Prix (sculpture) at the Venice Biennale in 1952. From this time he made longer and longer stays at Saxe, near Tours, where he has worked on many giant stables destined, for example, for Expo in Montreal in 1967, or for the Olympic games in Mexico in 1968. In 1969 he had a retrospective exhibition at the Fondation Maeght at St Paul de Vence, and an exhibition 'mobiles-flèches' at Gimpel Fils in London. Calder is making several monumental stables for Grand Rapids in USA, for Amboise in France, and for Smith Town, Long Island. A pioneer of kinetic art and its most famous exponent, Calder has shown all over the world and his works are in all major collections. A retrospective exhibition was held at the Tate Gallery, London, 1962.



NINO CALOS



Lumino-Kinetic Wall Panel
(Mobile Lumineux 222), 1966-67
Perspex, wood, neon, painting
(with electric motors)
Size 420 x 220 x 18
Collection the Artist

Nino Calos was born in 1926 in Messina, Italy. His first experiments in light projections began in 1940, and his first one-man show was at the Istituto Garibaldi, Messina in 1952. He moved to Paris in 1956 and has since had one-man shows at the Galerie Spotorno, Milan, 1957; Galeria del Cavalino, Venice, 1960; Galerie Belfond, Paris, 1961; Galeria Il Fondaco, Messina, 1964; Studio Margutta 13, Rome and Studio Int. L'Arco, Macerata, 1966; Centre Culturel Municipal, Villeparisis, 1968; Maison du Tourisme, Auxerre and Musée Municipal, Sables d'Olonne in 1969. Calos has participated in exhibitions of Kinetic Art in Tel Aviv, 1965; Eindhoven, 1960; Paris, 1967; Le Havre, Louviers, Grenoble, Sables d'Olonne, the French Pavilion at Hemis Fair, San Antonio, 1968; Oslo, Helsinki, Copenhagen, the French Pavilion at Montreal, 1969; Nanterre, 1970. His works are to be found in the collections of the Musée d'Art Moderne, Paris; Musée Municipal, Sables d'Olonne; Museo Civico d'Arte Moderna, Turin; Galleria d'Arte Moderna, Verucchio; and in private collections in Europe and USA.

Why electricity? Why movement in the physical sense? Because physical movement, using electricity, is an important complementary factor in bringing the work of art (which is always a fiction) ever nearer to perfection. In a new age we need new art, an art which can assimilate all the inventions of mind and matter. Any art which just models itself on the art of the past must decay and perish in mere mystification. About 1948-49 I began to get effects of moving light by projecting intermittent coloured light upon my works which consisted of spangles encrusted in a ground of brilliantly hued powders. But the

time was not yet ripe for such experiments to be thought of as part of the natural and necessary growth of a contemporary art which had evolved from Futurism and Cubism. Later, in Paris, after meeting with Frank J. Malina (1956), who for some years had already been using electric light as a means to promote plastic expression, I achieved a more concrete form of lumino-cinétisme. At first, as my chief concern was to get movement physically into plastic art forms, my works were fairly highly coloured compositions where shapes and colours changed in progression within a time limit

(one minute, or two) though the effect seemed much longer. Later on, the use of a single colour, or a gradation of white, brought me to make shapes more geometrically, and to achieve greater dimensions in an architectural sense. But, at a time when, within a given artistic ambience, there is the tendency to consider 'valid' only the purely optical effects, and when the ever-increasing 'structuralization' of the 'public sector' of our lives causes us to feel an intense actuality in Mondrian's plasticism, Man, nevertheless, still remains a 'non-formal' being and no scientific discovery can ever extinguish the ineffable

flame of poetry which animates his secret life. It is not easy to take light (electricity) and use it as an element in plastic art like a colour or a sign, and I see the use of (electric) light as valid only in cases where it becomes shape, volume, sign, colour or rhythm, in a new aesthetic, harmonizing space and time. Otherwise it has nothing to do with art. Art, and that includes Kinetic Art too, is always an emotional product of Man's soul, and Man, for his part, is himself the product of an emotion.

MALCOLM CARDER

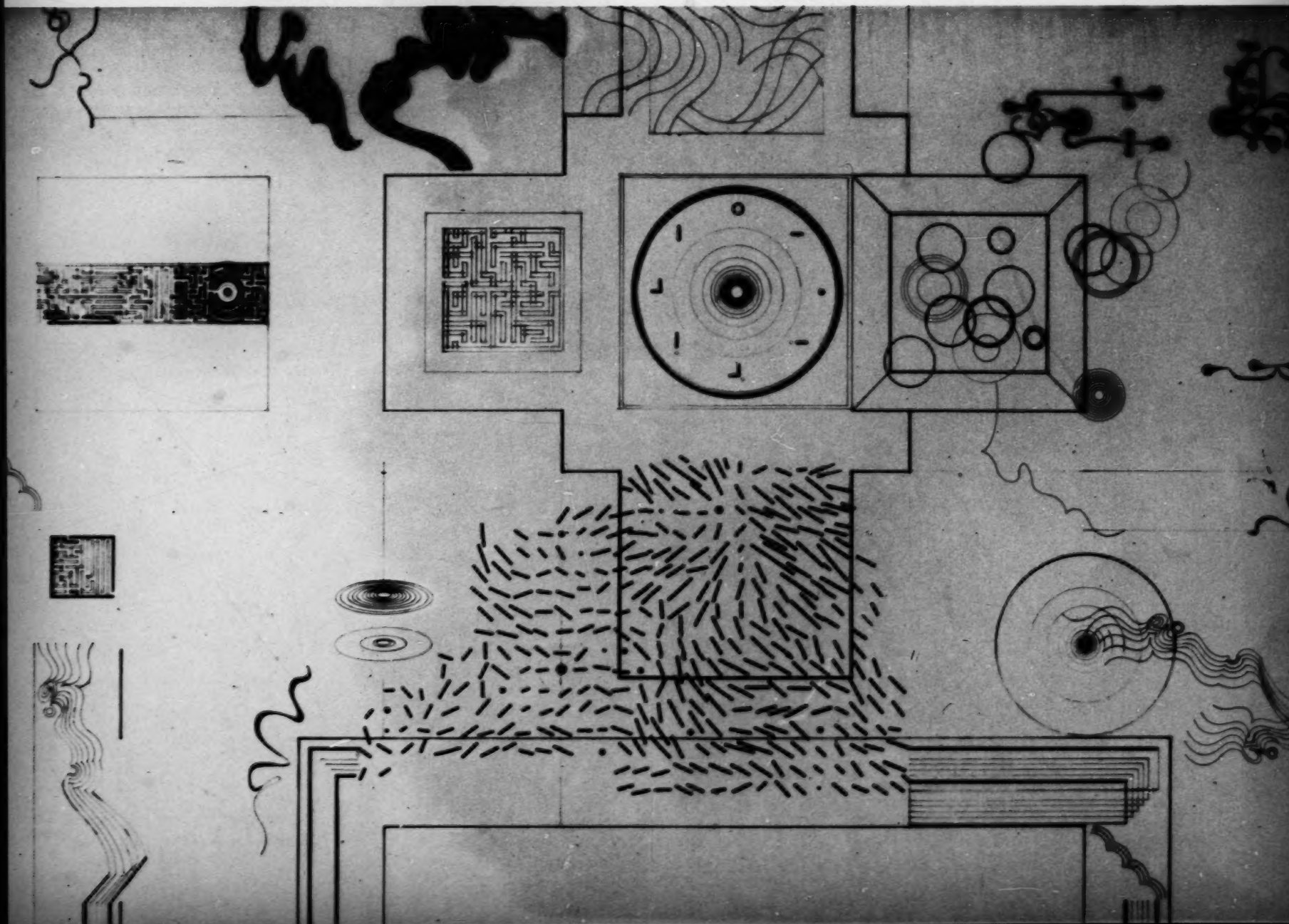
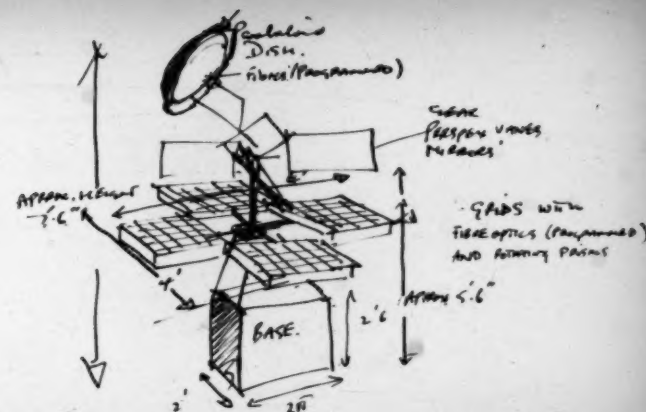


MA64 - Timetrack of the 14
Metronomes, 1970
Electronics, perspex, neons, ball
bearings, steel
Size 120 x 120 x 120
Collection the Artist

Malcolm Carder was born in 1936 and studied architecture and painting at Kingston School of Art until 1961. Since then he has been a freelance graphic designer and teacher, and is at present Research Fellow in Visual Communications at the School of Architecture, Portsmouth Polytechnic. He has shown regularly since 1967, at the Fondation Maeght, Provence; Axiom Gallery, London, 1968; Kunsthalle, Berne, 1969; Hans Mayer-Denise René, Krefeld and Nigel Greenwood, London, 1970. A large work was commissioned for the British Pavilion, Montreal, 1967. His works are in public collections at the Tate Gallery, London; Walker Arts Centre, Minneapolis; Arts Council and Contemporary Art Society.

Our Awareness of Experience is largely determined by the languages we use, which can be verbal or non-verbal. Our present languages, often limited to a single sense, are inadequate to structure perceptions of our incredibly complex environment of interacting communication networks which involve more than one of our senses at a time... an incessant drumming synesthesia. This might explain my preoccupation with present technologies AS NEW LANGUAGES although, as yet

their vocabularies and grammars have not been deciphered. However by simply playing with them these languages reveal themselves through the inherent structure of the media. Potential language becomes Kinetic. The work is... a Time machine... a Machine for the Time Being... a HOROGRAM... a diagram of Time and PLACE... A map of the successive changes of PLACE... driven by the MOTION or TIMEFLOW of electrons.



AL CHENEY

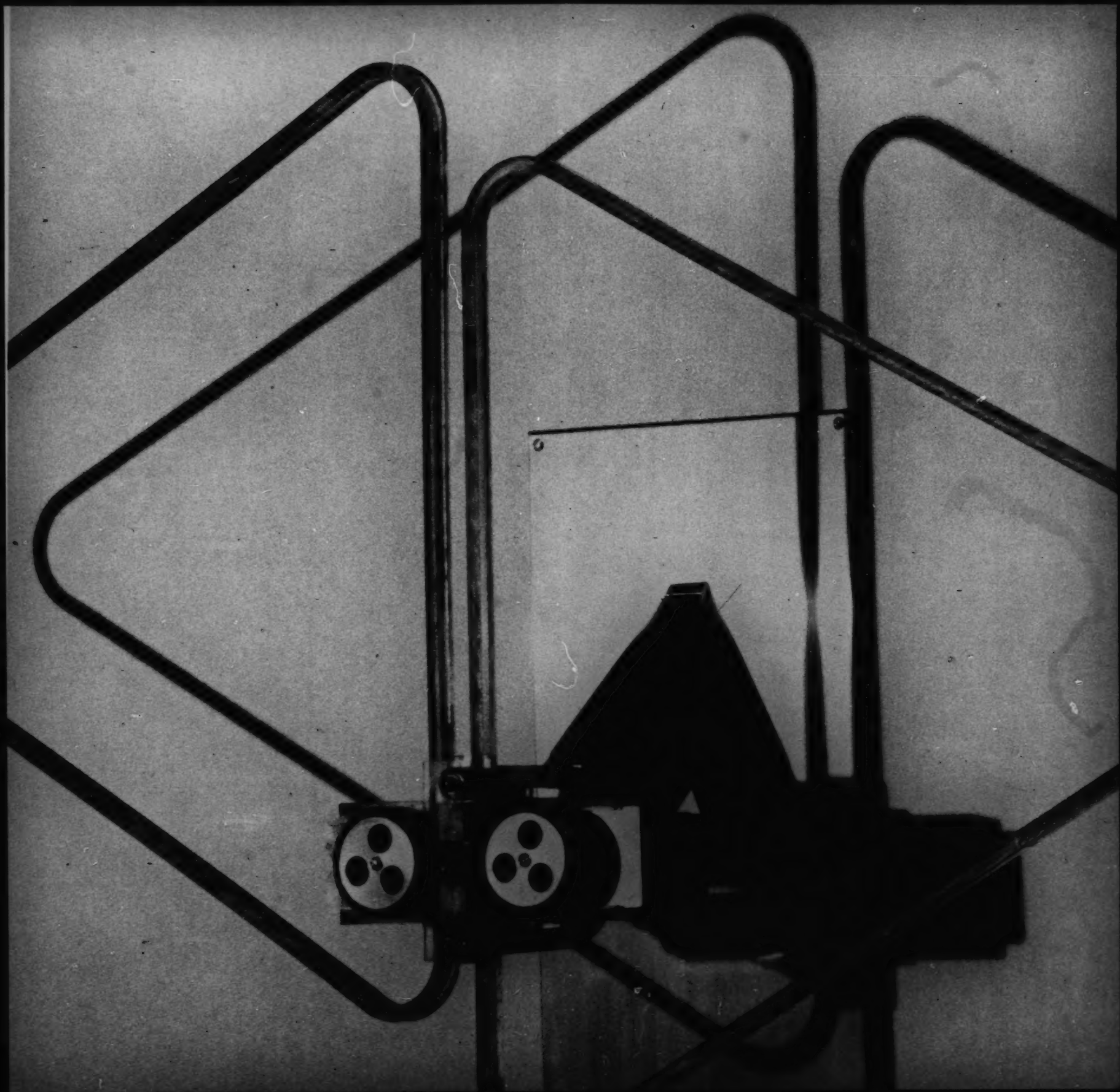


Ringer, 1969
Motors, perspex, aluminium,
walnut
Size 80 x 45
Collection Esther-Robles
Gallery, Los Angeles

Alan B Cheney was born in 1942 in San Francisco and studied sculpture at the San Jose State College, graduating in 1969. He is an instructor in experimental media, Department of Fine Arts, Rice University, Houston, Texas. He has had one-man shows at San Jose College Gallery, 1968; Esther-Robles Gallery, Los Angeles, 1969 and has participated in several group shows in Texas and the West Coast. His works are in the North Western Bell Telephone Collection, and in private collections.

My interests are centred around energy forms (i.e. heat, light, sound and motion) which I use as both subject and medium usually in conjunction with a manual or automatic viewer participation system. I also enjoy simplifying the form of my pieces to basic practical parts to magnify the expression of the work and minimize maintenance and breakdown.

The Ringer is an expression of a controlled motion synthesizing two nearly matched primary cycles or loops into one secondary overall cycle. Though it contains no viewer participation system it does exemplify my interests in using the machine parts for their aesthetic value. For an example, the electrical wires I also see as coloured, moving three-dimensional lines. The motors are also balanced masses working out tiny rhythms of their own while being mirrored in their space by the finish of the main chassis block.



GIANNI COLOMBO



Elastic Space, 1967-69
Aluminium (electro-mechanical movement)
Size 100 x 100 x 50
Collection the Artist

Gianni Colombo was born in Milan in 1937. In 1954 he produced non-figurative works in various materials; in 1958 a series of monochrome reliefs and in 1959 a series of reliefs which invited spectator participation. In 1960 he founded Group T with Anceschi, Boriani and de Vecchi, and exhibited his first three dimensional, electro-mechanical structures. 1961-62 saw the Rotoplastic multiples published by Danese and Olivetti. Experiments with light, perspex and vibrating mirrors followed, with research into the perception of forms in rapid movement. Colombo took part in the international 'Nouvelle Tendance' movement in Zagreb and Paris in 1963 and has subsequently been concerned with environmental structures, experimental films and industrial design. He was awarded a first prize at the Biennale in Venice in 1968. Works by Gianni Colombo are to be found in the Museum of Modern Art, New York; Galleria Nazionale d'Arte Moderna, Rome; Museo Sperimentale, Turin; Museum des 20 Jahrhunderts, Vienna; Progressive Museum, Basle; College of Pharmaceutical Sciences, Columbia University, New York; and in private collections.

In the development of visual communication, it is the dimension of the spatial environment that will be the centre of my plastic interests. In this sense 'environment' can be defined as any plastic object that is realized and used in terms of inhabitability. The environment presented here illustrates the state of inhabitability in a space conditioned by action of a kinetic nature. The presentational field is a large cubic container – one of the most usual forms in which we live – and within this cube, there is the development of permutations of forms and conditions – some of the most unusual living conditions in our experience. The visitor finds himself within a geometric organisation of space that undergoes continual dimensional osmosis with several simultaneous kinetic events. These events superimpose upon and interfere with one another while expanding in every direction, and tend to eliminate the possibility of a fixed centre of observational attention, and stimulate a situation that is polyvisually rhythmic. This experiment attempts the realisation of a visual object that is free not only of analogical relationships to pre-existent reality, but also free of choices that derive from the subjective world of its author; the attempt is to make an object, the existence of which, in terms of visual communication, is primarily optical – visual communication that is directly based upon signals to be interpreted without the interference of semantics. This is a programmed kinetic-visual structuralisation in which the programming is completely legible at the spectator's level in terms of the combination possibilities of elements describing limited differentiations. In other words, it could be defined as an experimental construction exploring the optical and psychic behaviour of the spectator, who through his physical and psychic reactions partially determines for himself the image he sees – an image that is open to association of possible spatial dynamic relationships.



MIKE COOPER



Magnetic Roller 1, 1968
Chrome, perspex,
electro-magnet
Size 125 high
Collection Esther-Robles
Gallery, Los Angeles

Mike Cooper was born in 1943 in Richmond, California and studied sculpture at San Jose State College. At present he is at the University of California, Berkeley. He has had one-man shows at San Jose State College, 1968; Esther-Robles Gallery, Los Angeles, 1968 and 1969; Arleigh Gallery, San Francisco, 1968; and has participated in group shows annually since 1967. Mike Cooper's works are in private collections, mainly on the West Coast.

Presently, I am very interested in manipulating space in large framed areas by flexible units stretching and expanding which would be supported and directed by thin wires and aircraft tubing. Mechanically this could be programmed with electronic units controlling pneumatic and hydraulic pressure systems toward defining any space within a structural frame.



H R DEMARCO



Relation No.4, 1968
Chromed steel, motors
Size 250 x 50
Collection Denise René Gallery,
Paris

Hugo Demarco was born in 1932 in Buenos Aires, Argentina, and taught painting and drawing there. He was awarded a French Government grant and came to Paris in 1960, where he was soon involved in the studio of the Groupe de Recherche d'Art Visuel (GRAV). He has shown widely in Europe and the USA in most group shows of kinetic art since then. He had one-man shows at the Op Art Gallery, Esslingen, and the Denise René-Hans Mayer Gallery, Krefeld in 1967.

Traditional harmony exists no longer, it is replaced by a new dynamic harmony arising from the constant vibration in space, which occurs between the spectator and the work of art.

HORACIO GARCIA-ROSSI



Math-Ball, 1970
Perspex, motor
Size 17 diameter
Collection Denise René Gallery,
Paris

U, 1970
Perspex, motor
Size 25 x 15 x 10
Collection Denise René Gallery,
Paris

Ball, 1970
Perspex, motor
Size 22 x 10 x 10
Collection Denise René Gallery,
Paris

Horacio Garcia-Rossi was born in Buenos Aires in 1929 and taught painting and drawing at the Academy of Fine Arts there. He lives and works in Paris, and was a founder member of the 'Groupe de Recherche d'Art Visuel' (GRAV) in 1960, and of the 'Nouvelle Tendance' in 1962. He has shown in most of the exhibitions of these groups and in other shows of kinetic art, including the 'Denise René à Londres' exhibition, Redfern Gallery, 1968. Works by Garcia-Rossi are in the collections of the National Galleries of Fine Art, Buenos Aires and in Chile; the Albright Knox Art Gallery, Buffalo, and in private collections in Europe, the USA and the Argentine.

At the present stage of my research light and movement occupy an important place. The intrinsic qualities of light are extremely plastic, especially when interconditioned by and with movement. Seen like this, light assumes two paradoxical yet harmonious directions. In the physical sense it is a palpable and measurable, therefore real, element. In the 'poetic' sense, its condition is fleeting and changing (through movement) and therefore immaterial. Movement is usually monotonous when it depends on a cycle that repeats itself, but when dependent on the indeterminate laws of chance, of instability, both movement and light are enriched by the effect of surprise, the unforeseen and unknown. In some of my researches light-colour, or



simply light is reflected on to a translucent screen or on to translucent stems of perspex - using an indirect light source in unstable movement - and combines and is modified without repeating its cycle. This feeling of non-repetition of a given cycle led to the idea of interchanging the motifs and light-colours in one work, and of giving the viewer the possibility of himself changing these motifs and colours. In a sense this signifies multiplicity of the work within itself: internal multiplicity that leads us to external multiplicity, that is to the realization in series of a prototype.



GERHARD VON GRAEVENITZ

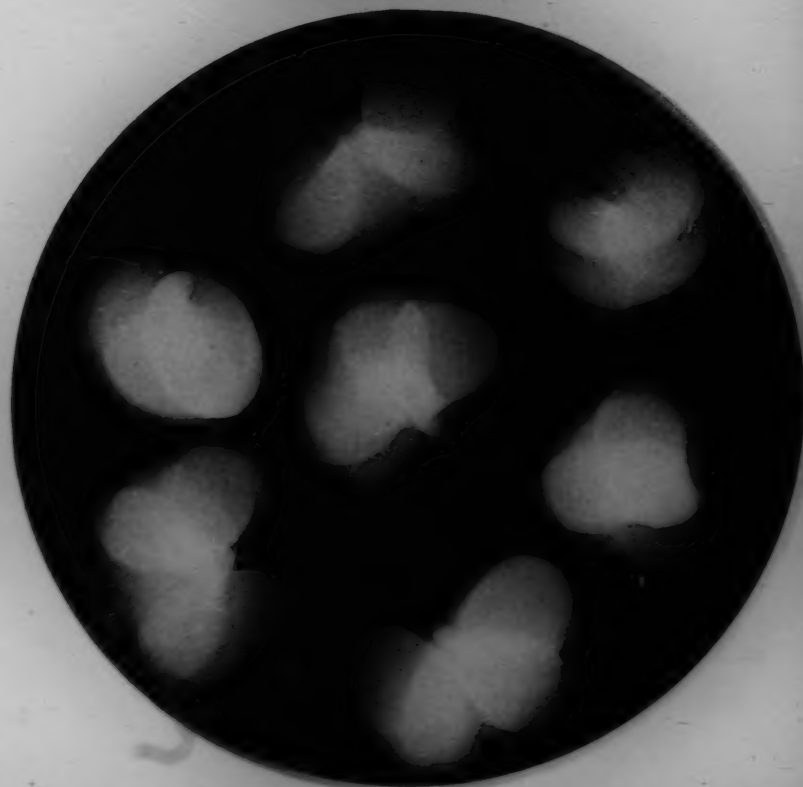
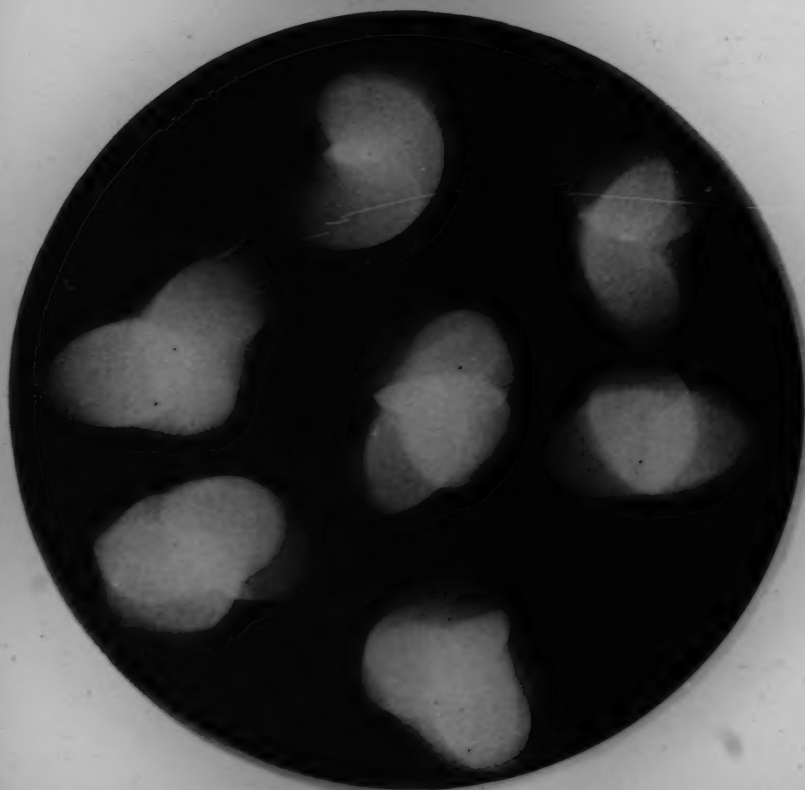
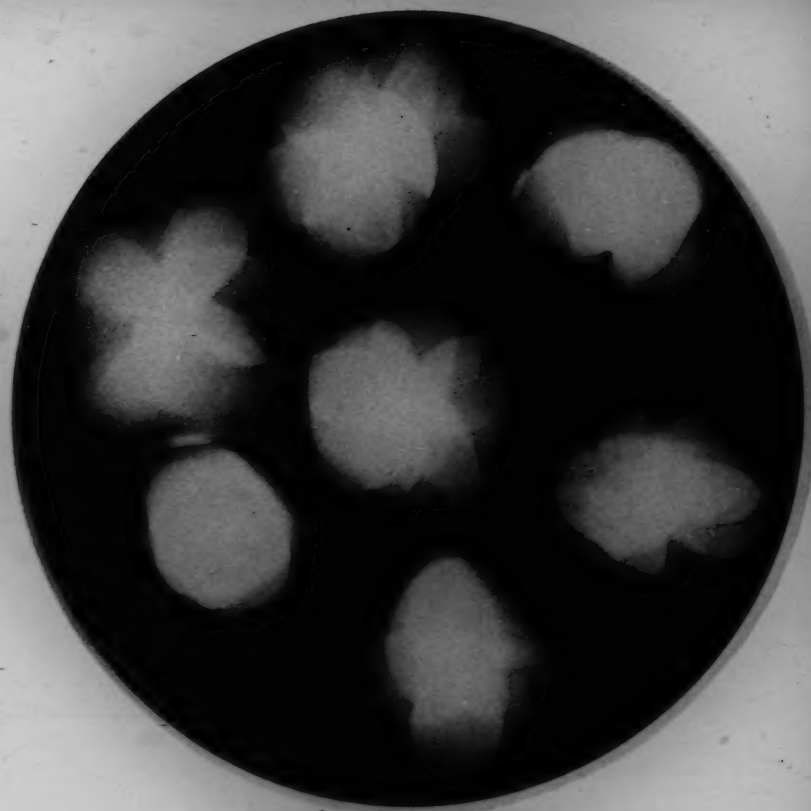
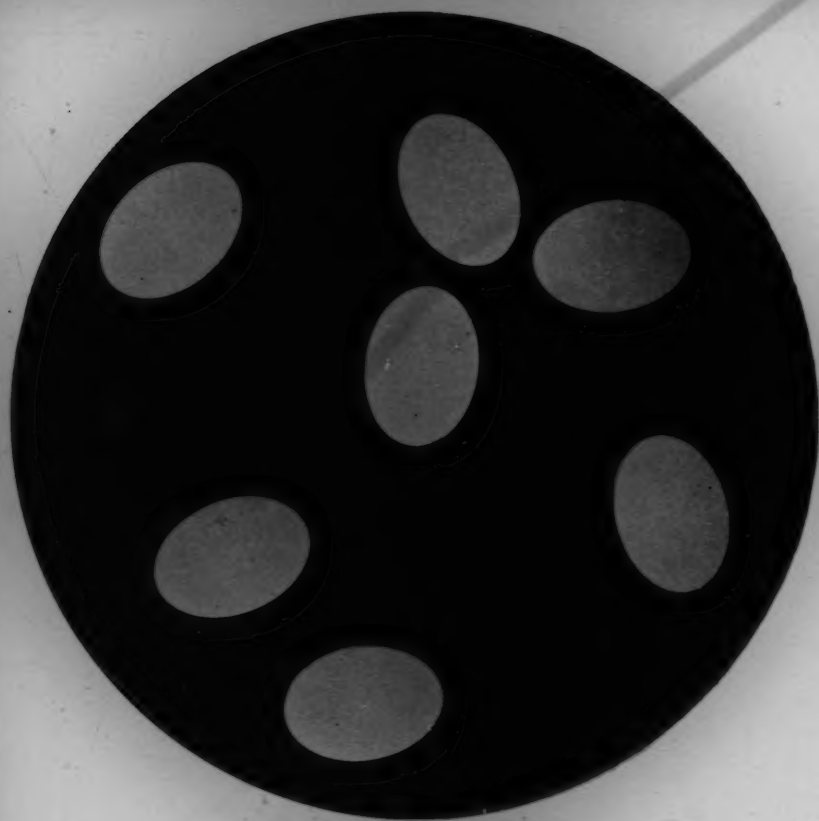


Round Objects with Ellipses,
1970

Wood, metal, motor
Size 182 diameter x 17
Collection the Artist

Gerhard von Graevenitz was born in Schilde, Mark Brandenburg, Germany, in 1934 and studied economics at the University of Frankfurt. In 1957-61 he studied at the Kunstakademie, Munich. He published 'Nota' magazine and directed the Nota Gallery 1959-60 and in 1962 helped found the international 'Nouvelle Tendence' movement. He now lives in Munich and Amsterdam. Works by von Graevenitz in public collections include the Städtisches Museum, Leverkusen; Karl-Osthaus - Museum, Hagen; University Art Museum, Berkeley, California; Städtische Galerie, Munich; Museum für Kunst und Gewerbe, Hamburg; Städtische Kunsthalle, Recklinghausen; Kunsthalle, Nürnberg; Landesmuseum, Hannover; Gemeente Museum, The Hague; and in many private collections in Europe and the USA.

My kinetic objects are visual objects. The elements are simple and geometric (ellipses in the work exhibited). Kinetic objects are not traditional sculptures set into motion. Motion means the changing of the network of relationships which defines the structure in space and time. Kinetic art is not a new style but a new art in the sense that it establishes a new object-spectator relationship.



KEITH GRANT



Idomeneo, 1970
Assistant: Dennis Creamer
Mild steel, stainless steel and
perspex
Size 426 x 240 x 240
Collection the Artist

Keith Grant was born in Liverpool in 1930 and trained as a painter at Willesden School of Art and the Royal College of Art, graduating in 1958. He is currently Head of the Painting School, Maidstone College of Art. He has had one-man shows at the New Art Centre, London, 1959, 1961, 1964, 1966; the Geffrye Museum, London, and the Maltings, Snape, 1969; Roland, Browse & Delbanco, London, 1970; and has participated in several group shows. His works in public collections include the Beaverbrook Foundation, New Brunswick; the National Gallery of South Australia; the Abbot Hall Art Gallery, Kendal; the Public Art Gallery and Museum, Leamington Spa; Bootle Public Library and Art Gallery; University of Newcastle; National Gallery of New Zealand; Manchester City Art Gallery; The Nuffield Pictures for Hospitals Collection; Camden Borough Council; Contemporary Art Society; The Ministry of Public Buildings and Works; the Education Authorities of Hertfordshire, Essex, Leicestershire, Nottinghamshire and West Riding of Yorkshire.

The moving sculpture designed as a 'social sculpture' is offered on long loan to the London Borough of Camden. It is to be placed on the 'Sun Deck' of the Oasis Swimming Pool, London. The work has been subsidized by the London Borough of Camden, the Arts Council and ICI Plastics Division. I believe artists must be conscious of the society in which they live and ought to endeavour to place their work or group projects in environments where people live, work and spend their leisure time, and should not demand huge fees for their work.

Black
enamel finish
on inside enamel

COVER
MICRO

Wind vane and cone
which falls forward
on one inch bearing
on cone is fixed -
acting as a free
hinged support

7

6

5

4

3

2

1

Wind vane

Standard
1 1/2"

cone

2 1/2"

18"

OR SQUARE
GRAVITY

3/4" diam. cone
1/2" diam. cone

CATALOGUES OF ART EXHIBITIONS ORGANIZED BY THE ARTS COUNCIL
OF GREAT BRITAIN REPUBLISHED ON MICROFICHE

Published on microfiche by:

Chadwyck-Healey Ltd
20 Newmarket Road
Cambridge CB5 8DT
England

Chadwyck-Healey Inc
623 Martense Avenue
Teaneck NJ 07666
USA

Date of publication and production of master: 1982

Series: The purpose of this series is to make available those catalogues that have lasting interest through their text or their illustrations. Catalogues and cumulations of titles in the series are available from the publishers.

Serial numbers: Each title is identified by a three-part serial number. The first part of the serial number designates the sales list in which the title was first announced. The second part indicates the agent of publication, i.e. the museum, gallery or organisation that was responsible for the publication of the catalogue. The third part of the serial number is the number allotted to that title.

Copyright, microfiche edition: Arts Council of Great Britain and Chadwyck-Healey Ltd.

Location of original: Arts Council of Great Britain, 105 Piccadilly, London W1V 0AU.

Technical data: Producing laboratory: Chadwyck-Healey Microform Publishing Services, 10 North End, Bassingbourn, Cambs., England.

LILY GREENHAM



Geometrical Elements in
Movement, 1966-67
Wood, collage, lights, motor and
programmed switch system
Size 100 x 100 x 50
Collection the Artist

Lily Greenham was born in Vienna and studied music but is self-taught as a painter and kineticist. Her private studies have been in psychology, philosophy and aesthetics and she has been involved in computer programming for aesthetic purposes. Since 1956 she has taken an active part in concerts of contemporary music, happenings and recitals of experimental poetry, working also as an actress and stage director. She is a member of the 'Nouvelle Tendence' movement. In 1969 she produced 'Art dans les Rues de Paris', a kinetic street environment. Works by Lily Greenham are in the following public collections: Musée National d'Art Moderne, Paris; Musée d'Art Moderne de la Ville de Paris; Victoria & Albert Museum, London; Albertina, Vienna; University of Sydney, Australia; University of Madrid, Spain; and in private collections in Europe and the USA.

Aiming for structure-changes in society by means of creating art objects for participation and not merely for contemplation. Exposing 'aesthetic situations' which initiate possible expansion of individual awareness faculties. Since 1967 seeking new ways of communication, leaving the 'object' behind and integrating art into everyday life. More and more using direct contact with the public by means of mixed-media through mass-media (theatre, film, TV, public places etc). Writing a new kind of word-material for recitation with free jazz music and percussion groups in order to oppose the destructive tendency of our days and postulating a future 'creative' society.



Three different colour-light
projections on one identical
programmed colour-structure.

MICHAEL HAYDEN



Irresolute Icon, 1970
Chromed steel, vibrators and
mercury
Size 210 x 90 x 60
Collection the Artist

Michael Hayden was born in Canada in 1943. He has had one-man shows at the Gallery Moos, Toronto, 1966, 1968, 1970; Vancouver Art Gallery, 1967; Cederbrea Library, Scarborough, 1968; Rothmans Art Gallery, Stratford, 1968; Electric Art Gallery, Toronto, 1970; and has participated in group shows since 1967. Much of his work is concerned with environments and with performances; he has published three records and two books. Works by Michael Hayden are in the following public collections: Toronto City Hall; Ontario Council of the Arts; National Gallery of Canada; and in private collections in Canada and the USA.

I would very much like it, if this grouping of photographs were to be used as the 'Artist's Statement'. All the photos are of me, were taken by my wife, Elke Hayden, and represent the function of my sculpture.



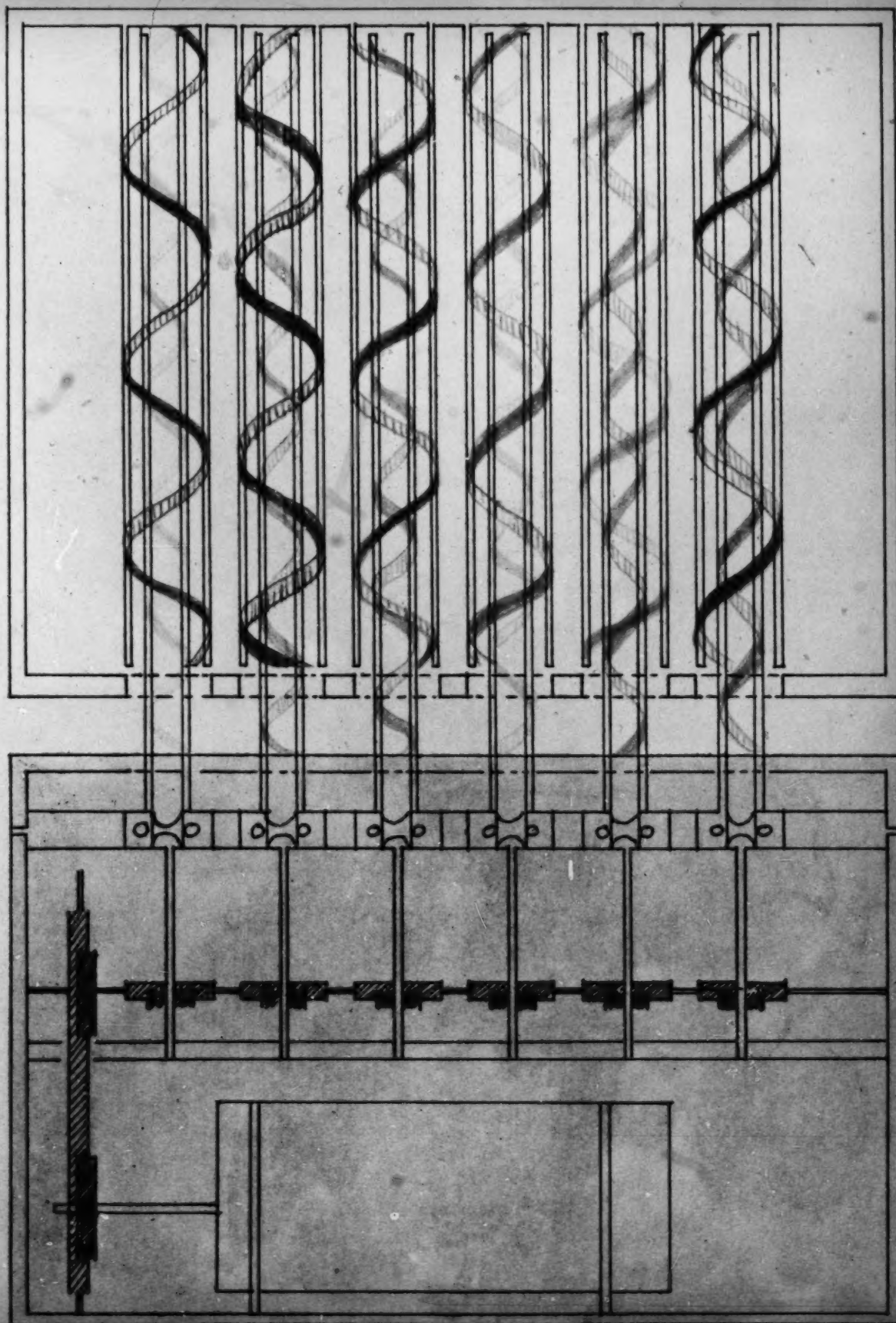
SER HOOGENBOOM



Optibox 2, 1970
Perspex, aluminium, brass,
mechanical parts (with motor)
Size 20 x 20
Collection the Artist

Ser Hoogenboom was born in
Holland in 1945 and has lived and
worked in London since 1967.
He has participated in group
shows in Paris, London and
Sweden. His works are mainly in
private collections.

The mechanics are a part of the medium on which the end result relies. To get the utmost results, the engineering job must be skilfully done and technically satisfying. The artist who uses this medium ought to be able to master technique so that, with it, he can create, rather than to rely on the bare material technique itself can offer.



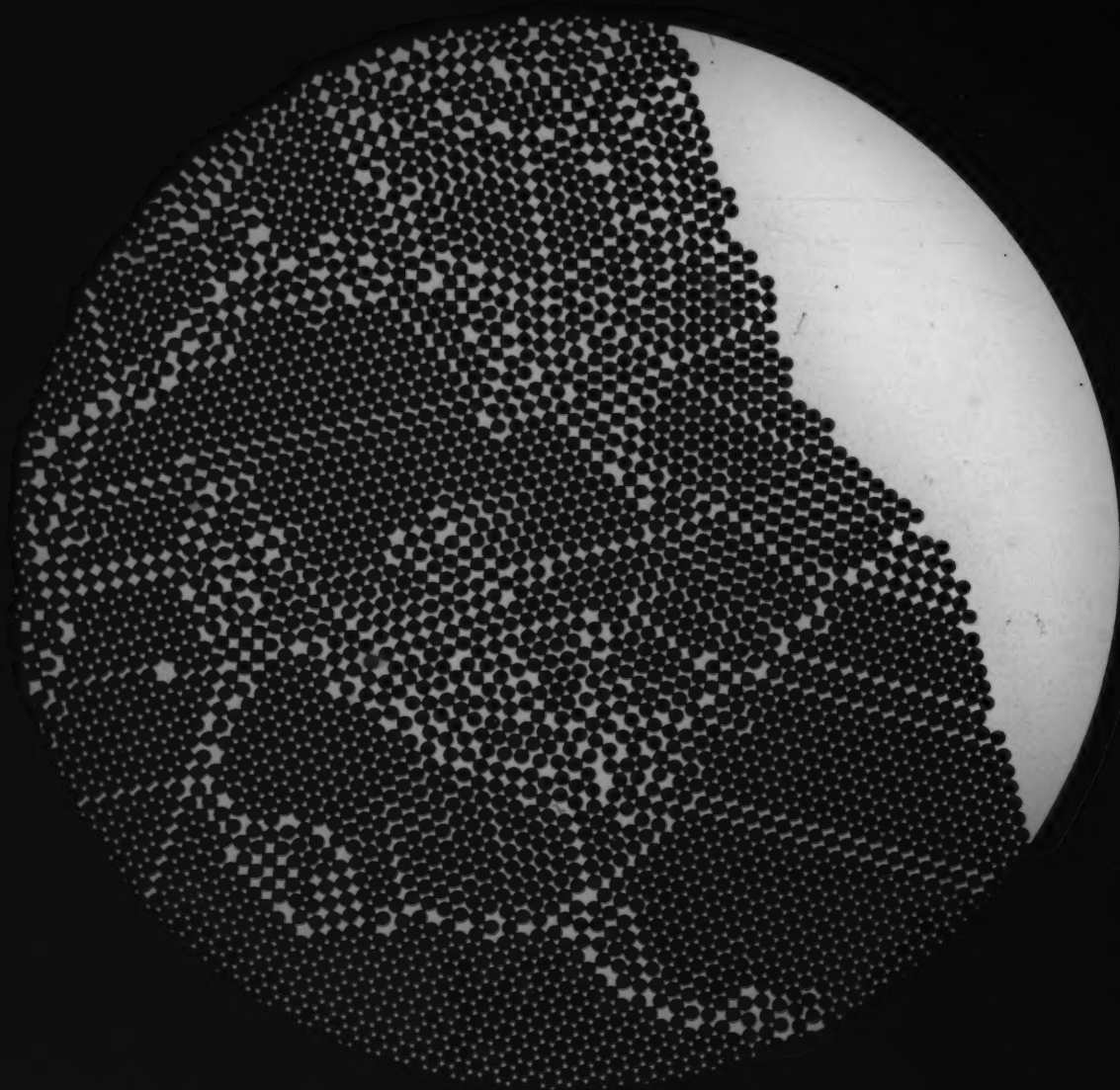
ARIE JANSMA



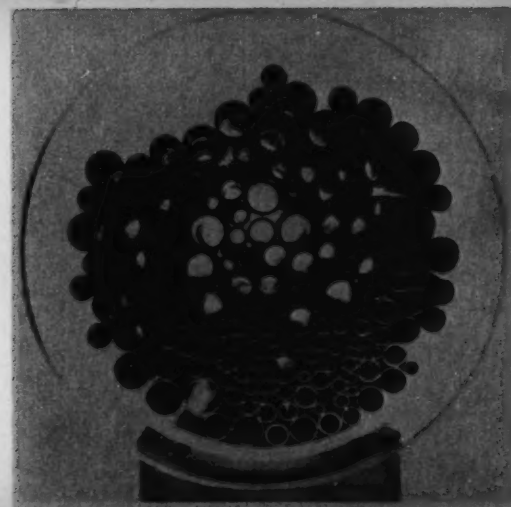
Cellstructure, 1968
Steel tubes in rotating perspex
cylinders
Size 30 x 30 x 15
Collection the Artist

Projection, 1968
Projector, perspex, fluid, wood
Size 150 x 30 x 30
Collection the Artist

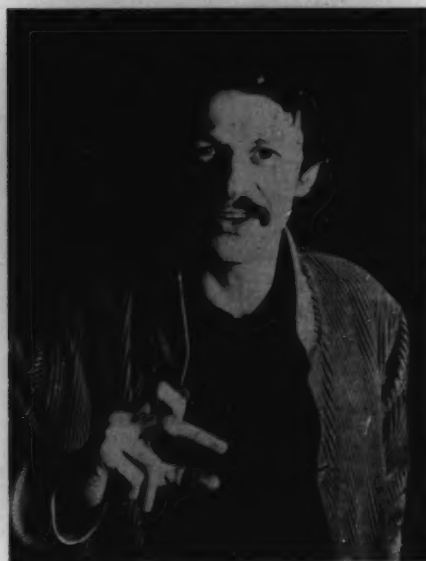
Arie Jansma was born in 1907 in Amsterdam and studied at the Nieuwe Kunstschool. He is a director of the construction firm of De Vier NV, having been with the firm since 1947. Besides normal production he is involved with the development of new applications for materials. He has been concerned with industrial design and prefabrication, at the same time making his own constructions and experiments. He has shown in exhibitions of industrial design and had a one-man show at the Stedelijk Museum, Amsterdam in 1969.



exertion... antimaterial...
 material... system... space...
 chaos... enjoyment... dimension...
 ... playspace... gravitation...
 challenge... no thank you...
 trying... indeed... rhythmic...
 movement... shape... universal
 ... look... the Jansma effect.



ROBERT JANZ



Portrait Sequence, 1970
Acrylic, metal, motors, neon
Size: 4 discs each 90 diameter x
40 deep, 270 x 210 total area
Collection the Artist

Robert Janz was born in Ireland in 1932 and studied at the University of Chicago and the Maryland Institute of Art 1953-63. He worked with George Rickey 1963-64 and received a Fulbright Scholarship in the latter year. He exhibited with the Equipo N, Madrid and 'Actuelle' Berne, before coming to London to work at the Royal College of Art in 1966. With McKinnon and Leonelli, he founded, and has exhibited with, the Continuum group, most recently at the Hayward Gallery in 1970. He presently lectures at the Wimbledon School of Art. Works by Robert Janz are in the Gallagher Collection, Museum of Arizona; Leicestershire Education Authority; the Natural History Museum, London; and in private collections in Europe and the USA.

In life there is a range in every face that slides from glamorous to grotesque. Faces move, features are in constant flux. Expressions can drift between innocent and diabolic. Moods shift inevitably back and forth through loveliness and meanness. A portrait art should attempt to indicate this expressive change.



HOWARD JONES



Sonic Six, 1968
'Sonic Six' is a brushed aluminium case containing electronic components that produce sounds when a person or persons move in front of it. Across the centre a set of equidistant one-quarter inch holes are placed horizontally. When the scanning area of the photo conductors is interrupted, the piece reacts with percussive sounds. Sonic Six has seven photocells and seven phase shift oscillators - each underdamped. Thus they will not go into sustained oscillation. The circuits are designed so that the attack and decay can be tuned. All the photosensors are designed to 'remember' how much light has been in the room during the last few minutes - 'Sonic Six' can move from cellar to sunlight and still get the same response.

Size 60 x 240 x 22
Collection Howard Wise
Gallery, New York

Howard W. Jones was born in Ilion, New York in 1922. A fighter pilot in the Army Air Force during World War 2, he studied painting at Syracuse University, 1944-48, and subsequently at Columbia University, University of Toledo and Cranbrook Academy of Art. Since 1957 he has been teaching at Washington University, St Louis, and lecturing widely at other universities. He received a Graham Foundation Fellowship in 1966. He has exhibited in group shows in the USA, of kinetic and experimental art since 1966, and had one-man shows at the H. Balaban Carp Gallery, St Louis, 1963; Nelson Atkins Museum, Kansas City, 1965; Royal Marks Gallery, New York, 1966; Howard Wise Gallery, New York, 1968 and 1970. At present he is working on major environmental commissions in Detroit, Boston, Rochester, Pensacola and St Louis. Works by Howard Jones are in the collections of the Jewish



Museum, New York; Walker Art Centre, Minneapolis; Albright-Knox Art Gallery, Buffalo; Milwaukee Art Centre, Milwaukee; St Louis City Art Museum; Museum of Contemporary Art, Ridgefield; Nelson Atkins Museum, Kansas City; Albrecht Museum, St Joseph; Washington University, St Louis; Rockefeller University, New York; and in private collections in the USA.

The object itself does not interest me – the object is a format. I have no message and I seek no image. Furthermore light, sound and silence are no more important to my work than paint is to painting. I am not interested in light for light's sake, nor sound for sound's sake. They are simply basic mediums of dynamic life. I use them because they are more flexible, more ductile, more malleable. They exist in a time-space dimension and

are a direct experience rather than a symbol or image. Light and sound, like life and thought, are actively involved with time, change and interval. I try to escape art. I would rather explore the uncertain nature of life. There is no specific thing for people to do in front of this piece. What they do is dependent upon what they have already done. There is action to the reaction to the tangency of sound to action. If movement can

portray attitude, then the sound reflects that attitude – there is total tangency of sound. There are no limitations in the manner a participator may arrange and alter the intervals of sound and silence. He can change them at will. The important change is the one that takes place within the participator – he is changed by his response.

JOHN KAINE



Chair Stimulator, 1970
Steel, perspex, motor
Size 60 x 50 x 55
Collection the Artist

John Kaine was born in London in 1935 and was apprenticed to a lithographer 1951-56. A student of the London School of Printing and Graphic Art, and subsequently at the Royal College of Art until 1960, he went to the Academie der Bildende Künste, Munich 1960-61. He has taught at the London School of Printing and Graphic Art 1961-62; Hornsey College of Art 1962-63; and since 1963 at Maidstone College of Art. He has never exhibited before, though many works are in private collections.

Sensation or escape mechanisms are part of our everyday life but not under that definition. The hair dryer is an escape to beauty, the radio and gramophone are escapes to other mental environments. I would like my chairs to be accepted as common domestic appliances of escape.



GYULA KOSICE



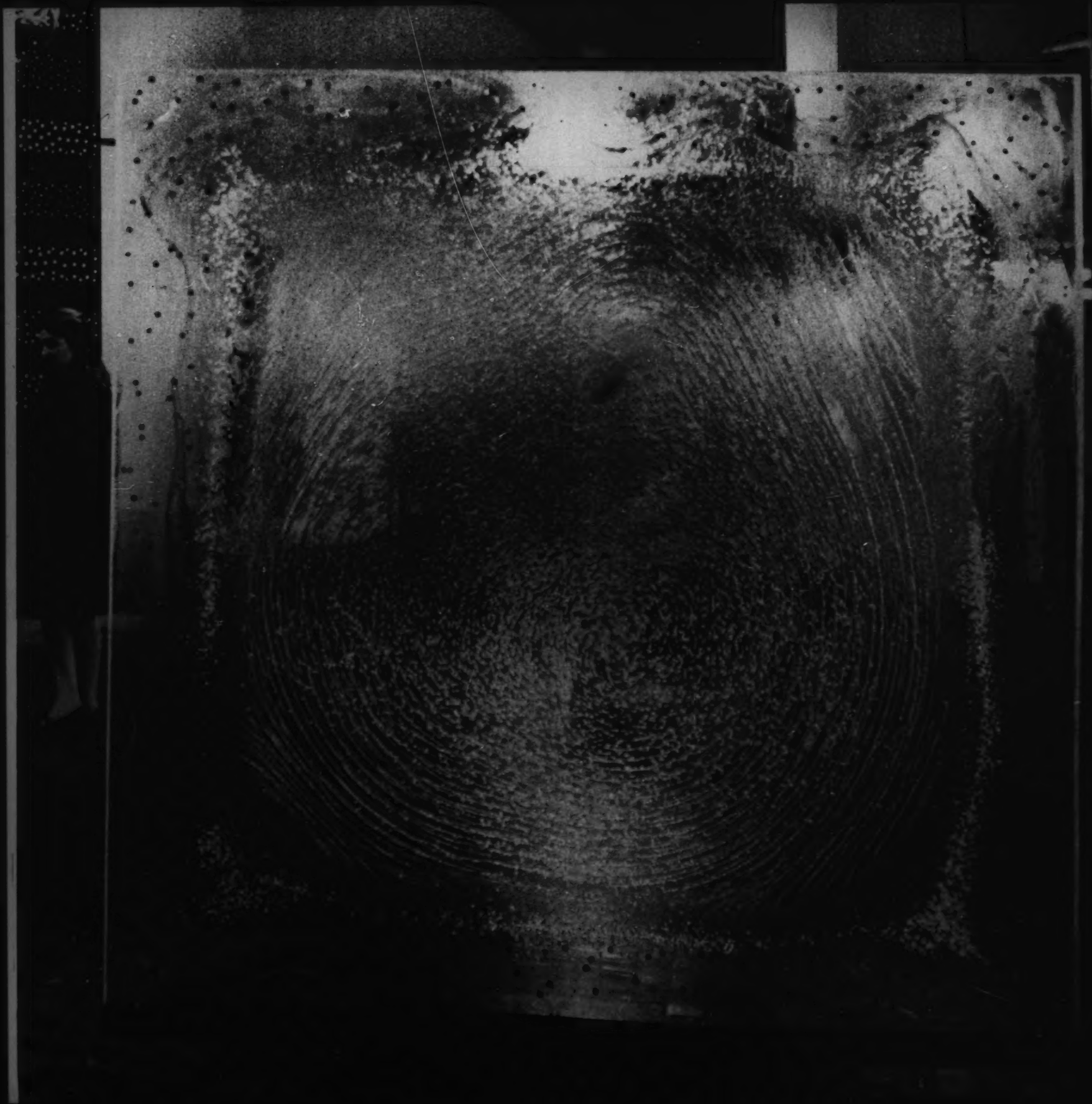
Hydromobilité Lumière, 1969
Water, acrylic, light
Size 85 x 85 x 55
Collection the Artist

Gyula Kosice was born in 1924 on the border between Hungary and Czechoslovakia. His family moved to the Argentine in 1928. He lives in Buenos Aires. One of the pioneers of light art and kinetic art, he is the creator of modern hydraulic sculpture: water in motion. He founded the movement 'Art Madí' in 1946. In 1957 he went to Paris where he created his first hydraulic sculptures. He has had one-man exhibitions at the Denise René Gallery, Paris, 1960, and at the Galeria Bonino, New York, 1967.

Hydro-kinetic cities:

I believe that we should institute town planning for space, because all our existing planning is a failure. Already, back in 1946, I envisaged the possibility of powerful magnetization in the ground enabling houses and buildings to be kept suspended in space and even moving within the magnetic field. Today we could envisage things even more daring; for instance whole cities suspended in interplanetary space by a system of hydraulic urbanization. But, since there is no gravitation outside the Earth's orbit, why not then build cities, supported by structures of crystallized water vapour, using this same substance as a source of energy. It could even be used as a fuel for their propulsion through space to any given site.

(From the monograph Kosice, by Guy Habasque, Collection Prisme, Paris, 1965.)



PIOTR KOWALSKI

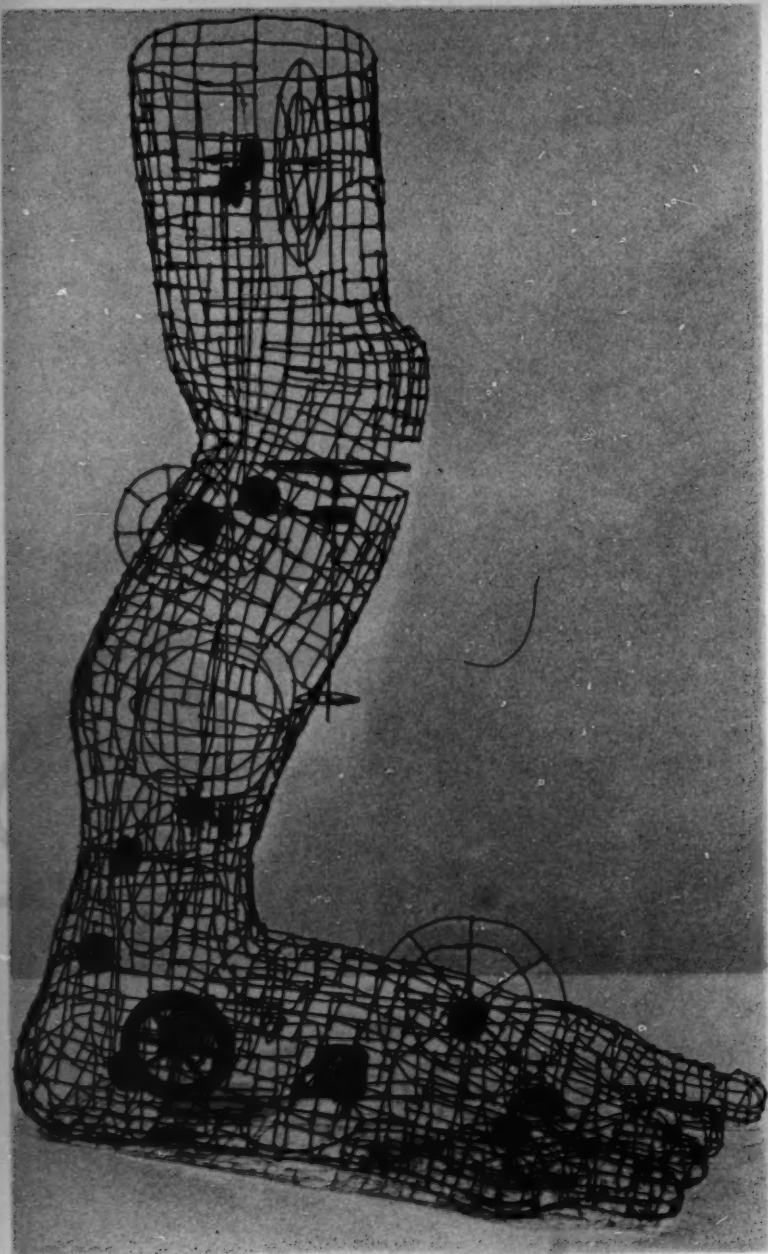


Electronic Cube, 1968
Electronics, perspex, metal,
wood
Size 200 x 100 x 185
Collection Editions Claude
Givaudan, Paris

Piotr Kowalski was born in 1927 at Lwow, Poland (now USSR). He worked in a factory before going to Brazil via France and Sweden in 1946. There he worked with Roberto Burle-Marx, the landscape architect. From 1947 to 1952 he studied architecture at MIT. He was invited by Marcel Breuer to work on the UNESCO building in Paris in 1953 and has lived there ever since. After opening an office in Paris in 1955 he carried out a varied body of architectural work before turning to sculpture and experimental structures in plastic in 1961. He was awarded a Graham Foundation Scholarship in 1963. In 1965 Kowalski worked in Los Angeles using facilities provided by the North American Aviation Co. These enabled him to make large metal sculptures produced with the aid of explosive charges. He has had one-man shows at the Galerie des Beaux-Arts, Paris, 1961; Kunsthalle, Berne, 1963; Museu de Arte Moderna, Sao Paulo and Rio de Janeiro, 1966; Galerie Claude Givaudan, Paris, 1967-69; 34th Biennale, Venice, 1968; Musée d'Art Moderne de la Ville de Paris, Galerie X-one, Antwerp, 1969; Stedelijk Museum, Amsterdam, Moderna Museet, Stockholm and Ateneumin Taidemuseo, Helsinki, 1970. He has participated in group shows of kinetic art since 1961.

'The real-false object'
The electronic image of the Cube is transformed by the spectator as if the Cube was real. Lateral displacement permits to see the right and left side of the Cube, getting nearer to the screen changes the perspective of the Cube, which like the real object, when one gets near to it seemingly becomes larger.





Foot

HARRY KRAMER



Endless Rail, 1960
Wood, iron, wind-up motor
Size 75 diameter x 9
Collection Hanover Gallery,
London

Foot, 1965
Wire, wood, elastic band, motor
Size 120 high
Collection Hanover Gallery,
London

Harry Kramer was born in Lingen, Germany in 1925 and worked as a hairdresser, soldier and actor until 1951. He produced the first figurines for the 'Mechanisches Theater' in 1952 and the '13 Szenen' at the Springer Gallery in 1955. He moved to Paris in 1956, producing films ('Die Stadt', 'Défense 5824') and 'mechanical' theatre. The first self-moving sculptures were produced in 1958, welded wire sculptures in 1959. Since then he has produced two ballets, four films and taught in Hamburg and Kassel. Kramer has had one-man shows at the Galerie Springer, Berlin, 1955; Galerie Brusberg, Hanover, 1961; Stadt Galerie, Biel, Librairie Anglaise, Paris, Kerchache Gallery, Paris, Niepel Gallery, Düsseldorf, 1962; Hanover-Gimpel Gallery, Zurich, Galerie Kerchache, Paris and Loeb Gallery, New York, 1965; Gilman Galleries, Chicago, Landau Gallery, Los Angeles and Dilexie Gallery, San Francisco, 1966; Galerie Brusberg, 1967; Galerie Mikro, Berlin and Kunsthalle, Mannheim, 1969. Works by Harry Kramer are in many public and private collections.

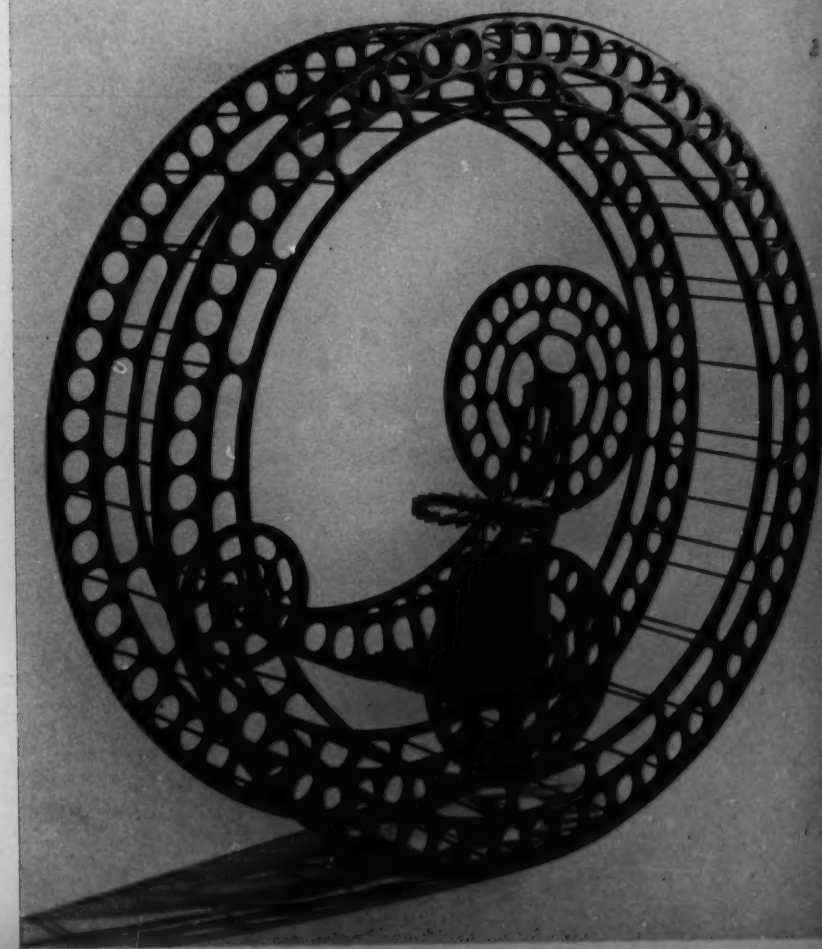
It is up to us whether we use the means of production and information at our disposal to educate a society conscious of its needs or a herd of consumer idiots. Fashions, excitement to saturation and the need for something else, something new, are not consequences of what's on offer, but of the inborn explosive material which has driven human society slowly but surely down from the trees and out of the caves into cities of millions and into manned rocket flight. The monotonous complaint that the patterns and proposals of architects, sculptors, painters and dramatists are electorally unprofitable is gradually turning into the lazy resignation of intellectuals who do not know what on earth to do with that disrupting cuckoo's egg - absolute values. That politicians are no scholars is an idle and unjust complaint as long as scholars who do think and act politically are pushed by their suspicious colleagues into a minority within a minority. We know that the market and its needs can be manipulated but we do not make use of this knowledge to force our products on the consumers. It is known what society can spend, consume, use up, but we do not regulate our production in accordance with the facts and information available. The sociologists tell us that in 50 years more than 90% of mankind will live in cities. Oppressed by this knowledge we lament that planning and finances go into the forced development of the electorally attractive allotment and of the treasured owner-occupied house, and we withdraw sulkily into our own bungalows and mow the grass to sweat off a few pounds of fat. Who is displaying arrogance, the consumer or ourselves? Neither the economy nor the market structure is against the manufacture and sale of works of art provided that we, when designing and planning, think in terms of industrial production and modern sales organization. The selling off of a few drawings has nothing to do with industrial

production. Eventually it clogs up homes with hotel room wall decorations, and in the end brings the art collector down to the level of autograph and stamp collectors. If we want to create a wide market and keep it in suspense we must demote our claim to eternal values and instead have more new ideas and be more dynamic. Once the consumer is aroused he will not swallow unoriginality and tedium on the pretext that it is art and that only by means of meditation can one advance to the centre. What's the use of the miserable elitest manner of thought with which we already teach the students in the academies and the art schools to despise society? Why don't we teach the students that for the success of an attack, tactics and thoughtful planning are necessary. This world can be manipulated. If we believe that we have something better to offer, it is rank irresponsibility not to do so with all the means at our disposal. If we do not give up the isolation of the single disciplines the best and most energetic men will continue to depart to industry and to advertising. When, by means of industry and advertising, they bring the models they have developed to the ordinary man, they have at last become part of productive society and do not remain for ever a subsidized minority. We cannot avert our eyes from the realization that society does not need our products to survive but that we cannot survive without society. Why not draw the conclusion and adapt our products to the dynamics of the future industrial society? The lonely inventor of the nineteenth century no longer exists. Great scientific achievements are now carried out by teams. The single artist thrown back on his own resources is an anachronism. We have discovered that cultural pessimism and the terrors of technology were unnecessary fictions of the nineteenth century. They are repeatedly offered as excuses for a failure before the demands of modern society. We must educate people to be sufficiently flexible to cross the frontiers between visual and

dramatic art in both directions. TV, films, theatre and exhibitions (in the sense of international exhibitions) will place before art tasks which will require creativity, co-ordination and knowledge of the whole scale of possibilities. Who prevents us from offering sculptures of paper and synthetic materials to cigarette manufacturers like Reemtsma or to soap companies as advertising material? Before the war Reemtsma brought art history to the people with their cigarette cards; why should they not use cigarette cards to bring art to the people? The argument that art is being thereby sold down the river is nonsense. If the worst happens we have simply hastened an inevitable development, and that would rather be a gain. Pop art tried to bring art close to the people. With prices for comic strips from 4,000 to 40,000 DM that is at best a joke. The discovery of the rotary press has prevented no-one from writing good novels, and cheap paperbacks have not brought literature into disrepute. Mail-order businesses and shopping centres are legitimate elements of modern society. When rubbish and trash sell well that is a compliment to the sales manager. Art will have to swallow its bitter words. There is no proof that what gives better quality for the same price is to be less well sold. Why don't we make the great effort and try to put our methods of production and materials in proper order so that we become competitive. I am always hearing the same cry that art exhibitions and openings lack the necessary social prestige. In New York and Los Angeles they have it. In the States, Harper's and Vogue contain in every number stories and photo reports of the openings of exhibitions. It is true that these people attend in evening dress, but we also go to bathe in bathing dress. With a little effort we don't have to look just like waiters in our dinner jackets. My colleagues say to me that Germany's magazines are not exactly the best. In my experience this situation is not improved by the founding of new magazines. It has been shown that

after a time they are just as bad as the old ones. Why don't we try to supply them with material which doesn't make the reader yawn. Perhaps that will make us and the magazine socially acceptable. Sadly, the fatal bent towards immortality is innate to all of us and the strongest motor of our actions. We should, however, try to keep our vanity under control and now and again forget about fame after death. When we bring an object on to the market whose price and material make it possible to scrap the thing when it has served its purpose, we relieve the buyer from the fear of having lumbered himself at an enormous price with an enormous responsibility; and we cease to clog up the future with what has become respectable boredom.

Endless Rail



DANTE LEONELLI



Neondomes, 1970
 Oroglas, neon, argon tubes,
 electrosonic matrix
 programming equipment
 Size of domes: height 90 x
 diameter 168, and height 60 x
 diameter 107
 Collection the Artist

Dante Leonelli was born in 1931 in the USA, and studied at the Art Institute of Chicago. He served as a combat photographer, US Army Engineer Intelligence 1953-55. In 1955 he came to London as a research student at the Courtauld Institute of Art. He was head of the Plastics Research Department, Royal College of Art where he founded the 'Continuum' group with Janz and McKinnon. He had one-man shows at the Matthiesen Gallery, London; Galerie der Spiegel, Cologne; Institute of Contemporary Arts, London between 1959 and 1968, and has shown widely with 'Continuum', most recently at the Hayward Gallery, 1970. Works by Leonelli are in public collections in the Kunsthalle, Basle; National Gallery of Victoria, Melbourne; Art Institute of Chicago; Smith College Museum of Art, Northampton, Mass.; and in many private collections in Europe and the USA.



There are two things my work is not about. Though calculating, it is not 'intellectual'. It comes about from simple private emotive obsessions with things like little girls' dimples, Loch Ness monsters, budding bean sprouts etc. As in burlesque, the intimation of these concerns is more effective for me than a literal presentation. Likewise a technician doing the work is preferable to doing it

myself. Manual therapy is the second thing my work is not about. At its best the work is concerned with activating intensities and transformations within the piece rather than the actual 'moving parts bit' generally associated with Kinetics. The metamorphosis is what it is about – and when it is on it is on, and when it is off it is on.

JULIO LE PARC



Continuel Lumière Forme en
Contorsion, 1966
Wood, aluminium, motor, lights
Size 122 x 150 x 35
Collection Denise René Gallery,
Paris

Julio Le Parc was born in 1928 in Mendoza, Argentina. After studying in Buenos Aires he moved to Paris where he has lived since 1958. He was one of the founders of the Groupe de Recherche d'Art Visuel (GRAV) and an active participator in the international 'Nouvelle Tendance' movement. Winner of the Grand Prix of the Venice Biennale in 1966 he has since become an international figure. He has exhibited continuously with GRAV since 1960, often making works in collaboration. His works are in public collections in the Museum of Contemporary Art, Zagreb; Museum of Modern Art, New York; Delgado Museum, New Orleans; Galleria Nazionale d'Arte Moderna, Rome; Tate Gallery, London; Museum of Fine Arts and Fondation di Tella, Buenos Aires; Albright Knox Art Gallery, Buffalo; and many others, and in private collections in Europe and USA.

Kineticism is not in itself a guarantee of quality. It runs the risk of becoming a new academicism.
From Studio International,
February 1967.

One must become a kind of cultural guerilla against the present state of things and point out all the contradictions. One must create new situations in which people may rediscover their capacity of bringing about changes; fight any tendency toward stability, permanency, lastingness; fight anything that heightens the state of dependency, apathy, passivity which is linked to habits, established criteria and myths.



LILIANE LIJN



Linear Light Column, 1969
Copper wound metal cylinder,
chromed steel turntable
Size 240 x 30 x 30
Collection the Artist

Lilliane Lijn was born in 1939 in New York and came to Europe in 1955. She lived and studied in Paris between 1958 and 1964, making her first kinetic poems (poem-machines) in the latter year. After living in Athens for two years she came to London in 1966 and had one-man shows at the Indica Gallery, 1967 and the Hanover Gallery, 1970. She has participated in many group shows in England, Europe and South America since 1959. Works by Lilliane Lijn are in public collections in the Museum of Modern Art, Paris; Atlantic Richfield Corporation, New York; Contemporary Art Society, London, and in many private collections.

The Linear Light Column is the electrocardiogram of Light. The erratic light line informs me of the heartbeat of each photon as it reacts with the changing surface of a slightly altered cylinder. I am intrigued with the strange connections I observe between Time and Space. In this particular piece of work I witness the Time-Space continuum, their inseparable and interchangeable identity. The contour of each revolving cylinder is translated into a linear pattern, into a fluctuating line of light. The three-dimensional patterns I previously made on the cylinder, are translated into two-dimensional lines . . . no. There is a third dimension. TIME. Depth and distance are replaced and translated into velocity. Grooves closely spaced - line accelerates. Light Line's velocity is directly proportional to pattern spacing on cylinder. I now see the TIME SPACE connection made plainly visible. The direction of the pattern also changes in the light line. Horizontal direction becomes motion direction - up or down. Do the Linear Light Columns translate Space into Time or do they prove that space and time are one and the same, reversable and connected, intimately interwoven?

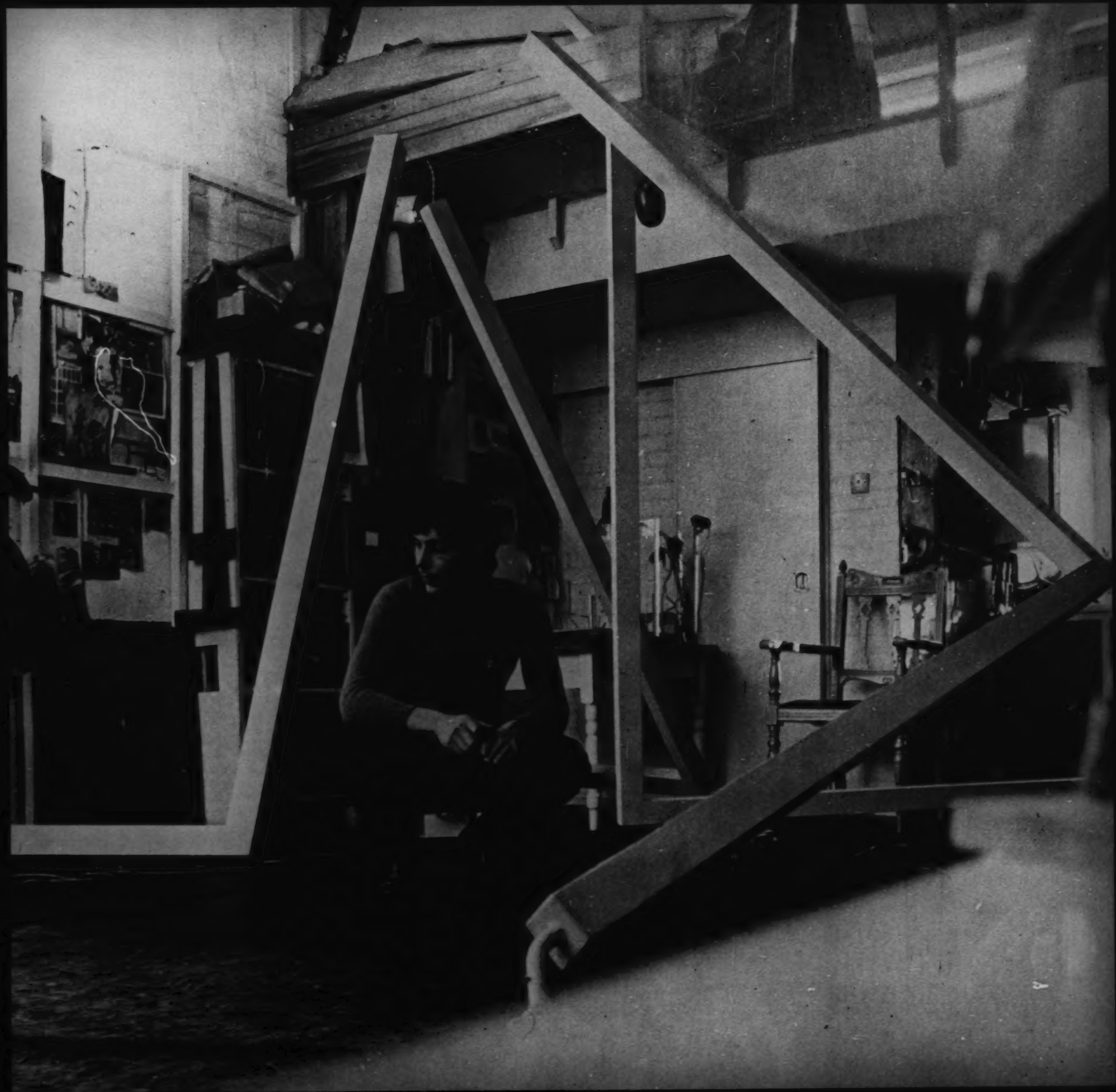


PETER LOGAN



Square Dance, 1969
Aluminium (electronic score by
Brian Hodgson/Kaleidophon)
Size 210 x 360 x 360
Collection the Artist

Peter Logan was born in 1943 in England and studied at the Slade School of Fine Arts, London University until 1968. After a project for the Pavilions in the Park pilot scheme he produced his 'Mechanical Ballet' at the New Art Centre, and subsequently at the Building Exhibition, Olympia in 1969. The expanded 'Mechanical Ballet' was shown at The Royal College of Art in 1970, and the piece included in this show is one of the elements of the ballet. Works by Peter Logan are in several private collections.



ERNST LURKER



Cubusone, 1968
Acrylic, wood, aluminium,
motor, lights
Size 100 x 140 x 140
Collection the Artist

Mobile Electronic Sphere, 1970
Acrylic, electronic components,
neon
Size 135 diameter
Collection the Artist

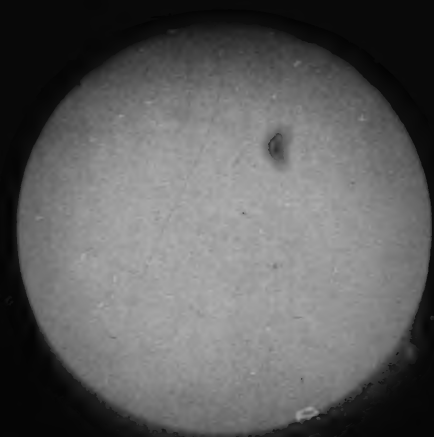
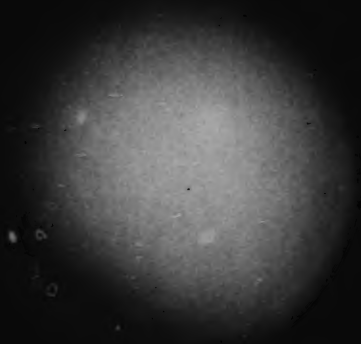
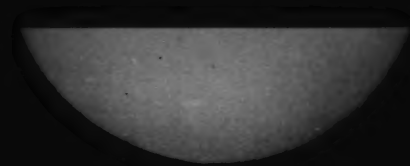
Ernst Lurker was born in Ulm, Germany in 1937 and studied art at Stuttgart, Hamburg and the University of Kansas, 1964. He lives and works in New York as a sculptor and designer, involved with water, fire, light fountains (for the Orange & Rockland Utility Company); the design of plastic furniture, lamps etc; happenings and outdoor events. He holds a licence from the NYC Fire Department to produce large open gas flames in public assemblies. The Museum of Modern Art commissioned a multiple 'Triangulations' in 1970. He has participated in many lively group shows in the USA in the past two years.

It is time that kinetic and light art, the dynamic medium of this technological age, finally broke its umbilical cord and came out of the artificial conditions of galleries and museums to find its place in the traffic centres of big cities, the airports, railway and bus stations, hotels and modern building complexes where the pulse of our time never stops. The positive trend in city planning that separates the various kinds of traffic (pedestrians, private cars, delivery trucks, public transport) into higher and lower levels with over and under passes, also creates a new dimension by breaking up the single plane into a multitude of interlocked traffic surfaces. In these spaces I see the ideal site for this new art form. A kinetic structure can rise through several levels offering different angles of vision to the spectator. Both the work in action and the spectator (in his vehicle or in elevators, escalators or revolving doors) become part of an intricate system of motion in all directions.



Cubusone

Mobile Electronic Sphere



Mirror Object, 1970
Concave mirrors, wood, motor
Size 143 x 143 x 14 (mirrors 60 x 60)
Collection Denise René - Hans
Mayer Gallery, Krefeld.

Adolf Luther was born in 1912 at
Krefeld-Uerdingen, Germany,
and lives in Krefeld. He studied
law at Cologne and Bonn
Universities and began painting
in 1942. From 1958 onwards he
has devoted himself wholly to
art, and particularly to the use
of mirrors and glass to
investigate the mysterious
world of light. His works are in
numerous public and private
collections in Europe and the
USA.

ADOLF LUTHER





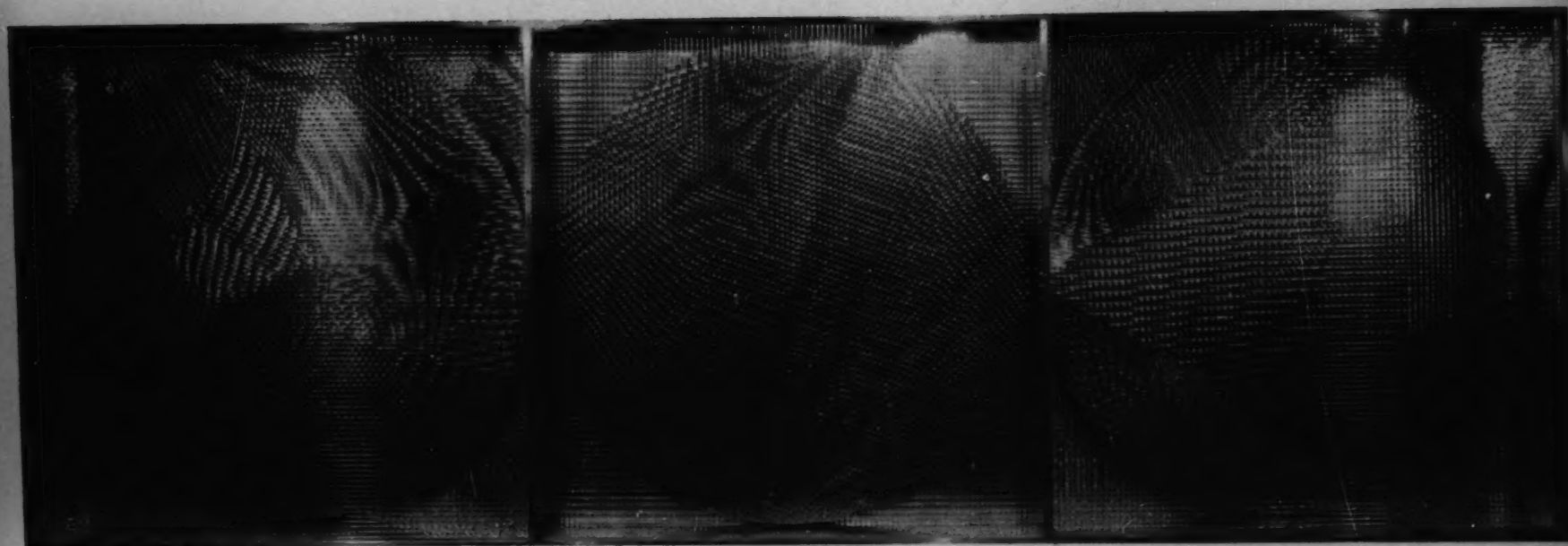
HEINZ MACK



Tri Rotor, 1963
Wood, aluminium, glass, motor
Size 365 x 17 x 30
Collection Denise René - Hans
Mayer Gallery, Krefeld

Heinz Mack was born in 1931 in Lollar, Hesse, Germany and lives in Düsseldorf. He studied at Düsseldorf 1950-53, took a degree in Philosophy at Cologne University in 1956. With Otto Piene, he founded the Group Zero and the review 'Zero' in 1958. He was awarded the City of Krefeld prize in 1958, the Prix Marzotto in 1963, and the Prix de la Peinture at the IVth Paris Biennale in 1965. Mack began the series 'dynamos de Lumières' and the rotating reliefs in 1960 and has developed the theme ever since. Mack has had many one-man shows including the Galerie Schmela, Düsseldorf, 1957, 1958, 1960, 1965 and 1966; Galerie Iris Clert, Paris, 1959; Galerie Behr, Stuttgart, 1959; Galerie Azimuth, Milan, New Vision Centre Gallery, London, Galerie Diogenes, Berlin, 1960; Galerie Nota, Munich, Galerie Ad libitum, Antwerp, Galerie dato, Frankfurt, 1961; Galerie Ad libitum, Antwerp, Galleria Cadario, Milan, 1963; Galerie d, Frankfurt, Galleria La Polena, Genoa, 1964; Galleria l'Elefante, Mestre-Venise, McRoberts & Tunnard, London, 1965; Howard Wise Gallery, New York, 1966; Op Art Galerie, Esslingen, Galerie Rottloff, Karlsruhe, 1967. His works are in many public and private collections, including the Tate Gallery, London.

*I like to go straight on
I like to follow my right hand
I like to follow my left hand
I like to go upstairs
I like to go downstairs
I like to fly into the sky
I like to glide down to the earth
But I never like to go backwards:
there is no real time, no real
space, no real light*



FRANK J MALINA



Tracks I (No.1053/69), 1969
Fluorescent tubes,
synchronous motors, artificial
ambient lighting
Size 100 x 200 x 11
Collection the Artist

Frank Malina was born in 1912 in Brenham, Texas, USA. Degrees in mechanical engineering, PhD in aeronautics at California Institute of Technology, 1940. Until 1944 active in rocket and jet propulsion research, and subsequently director of Scientific Research, Natural Science Department, UNESCO, Paris. Since 1953 worked in Paris as an artist, founder-editor of 'Leonardo', and active in astronautics, geophysics, and international scientific co-operation. One-man shows in Paris at Galerie Henri Tronche, 1953; Galerie Arnaud, 1954; Galerie Colette Allendy, 1955; Galerie Furstenburg, 1961 and 1965; Galleria Schwarz, Milan, 1961; l'œil écoute galerie, Lyon, 1966; Galleria l'Obelisco, Rome, 1966; Galerie na Karlove Namesti, Prague, 1966; Students Memorial Centre, College Station, Texas, American Embassy, Paris, Institut Franco-Américain, Rennes, 1969. Frank Malina has participated in innumerable group shows of kinetic works since 1953, and has developed over the years his lumidyne kinetic system of painting. His influence on kinetics, through exhibitions, writings and publishing, has been enormous. Works by Frank Malina are in the collections of the Musée National d'Art Moderne, Paris; Musée d'Art Moderne de la Ville de Paris; Musée des Beaux-Arts au Palais St Pierre, Lyon; Kaiser-Wilhelm Museum, Krefeld; Peter Stuyvesant Art Foundation, Amsterdam; Hall of Aerospace Art, Smithsonian Institution, Washington; Unesco House, Paris; National Gallery, Prague; Centre National d'Art Contemporain, Paris; Robert Sarnoff Collection, New York; Palace of Arts and Science, San Francisco.

Interest in the various manifestations of kinetic art (i.e. art involving the use of motion as a dimension in a work of art) appears to be growing steadily. Kinetic art is not a stylistic or mannerist phase of art, but a new medium that has been added to painting and sculpture. It has one clear relationship with traditional painting and sculpture, and that is its content. An artist, in my opinion, cannot escape from the world within which he lives as a fish dwells in the sea. The visual artist is not a god-creator; he is a reflector and interpreter for the eyes and brains of his fellow men of selected portions of the world of man and of nature that he

receives through his perceptual systems. At this stage of the development of kinetic art, it appears to me that artists are groping empirically in several directions to reach modes of expression that might be considered in the future as symbolic of our time. There is contention between kinetic artists working with mechanical motion or with motion of light; with geometrical (mostly Euclidean) landscapes or with a wide variety of vistas opened to our eyes by explorations of nature; between those using a restricted palette (primary colours or only black and white) or the full spectrum of colours; hard mechanical edges and flat colour

surfaces or a wide range of form outline and nuances of shading etc. It is an interesting fact that kinetic artists rarely attempt the kind of subject matter that still obsesses many artists working in static painting and sculpture, namely, the human figure and familiar macroscopic objects and arrangements of ordinary daily life (with or without story content). In the natural sciences the study of the physical basis of the structure of matter has held the stage for the past fifty years or so. This probably accounts for the fact that many artists and promoters of art have tended also to think and to see in this way. This tendency, with its absolutist overtones, seems very

dangerous to me, for the potentialities of mankind and the variety of nature cannot be circumscribed by narrow, arbitrarily selected rules at any moment in the flow of time. That an individual artist will be limited, and will specialize in certain aspects of experience seems inevitable: however, the response of the appreciators of art will finally determine whether or not his work has real significance in their lives.

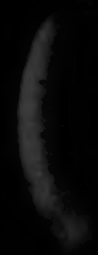
RONALD MALLORY



No.2121 Chemical Realism, 1969
Mercury, fluids, aluminium
Size 60 x 60
Collection Galeria Bonino, New
York

Born 1935 in Philadelphia, USA, Ronald Mallory studied architecture and art history at the Universities of Colorado and Florida and at the School of Fine Arts, Rio de Janeiro, with Roberto Burle Marx in 1956. After working as an architect in Los Angeles he went to the Académie Julianne, Paris in 1958. His studies in organic movement, and subsequent experience in New York from 1964 with mercury and polyester have developed into the present works. One-man shows at Galerie Claude Volney, Paris, 1960; Mirell Gallery, Miami, 1961; Stable Gallery, New York, 1966 and 1967; Esther-Robles Gallery, Los Angeles, 1968; Galeria Bonino, New York, 1969. Mallory has participated in numerous group shows since 1962, in Europe and the USA. Works by Mallory in public collections include the Whitney Museum and the Museum of Modern Art, New York; University of Arizona; Larry Aldrich Museum, Ridgefield; ICA, Boston; Chase Manhattan Bank, New York.

I believe art must be creation itself; it must design itself; it must break away from all known traditions. It has been a natural evolution for me to make the transition from painting, as it has always been known, to working with the newest discoveries of plastics and chemistry which are so much a part of our age. My art, therefore, has become organic. It has taken nature and let it move as it must, with my controlling and channelling it to create the finished work. It becomes as a seed planted in the ground: it must move, it must change, it must design itself.



ENZO MARI

In the course of the years we have come to realize that any kind of collective art exhibition provides the most effective official means of lending cultural qualification to operations which are either commercial, mystic or muddled.

The aims of these exhibitions (public, private, national or international) range from giving prizes to dispensing information, as well as providing means of comparison. So far as the prizes are concerned (with the resulting glorification of both operations and operators), the selection is guided by commercial speculation or, at best, by a level of sanctification of artistic phenomena (embodying all the cryptic implications of commercialism).

So far as the aims of providing information and comparison are concerned, the real purpose is to give cultural and official dimension to competitive and commercial undertakings.

To those who object that this cultural licensing of commercial operations represents the cost of spreading art and of appreciating its values, we would reply that:

*a) Licensing processes always deform.
b) Neither economic nor constitutional structures afford the true and liberal analysis of problems. These matters are decided on a political level by people without real interest in the aims and objects of exhibitions but whose motive is to acquire prestige.
c) The exhibitions in question are arranged by people conditioned by two negative factors: the first is the inadequacy of critics. Their language is too often either metaphorical or literary, sometimes a mere exposition of facts or elementary prose, thus of an unintelligibility even greater than the artist's language itself. The second negative factor is that the present situation (as affected by the aspects already described under (b) above) forces most of them to be guided entirely by a distressing spirit of individual competition. Let us ignore the connivance of commercially-minded dealers.*

The reasons given above seem to us to justify our decision not to take part in any more of these exhibitions. Some of us have already taken such steps in the case of the Triennale in Milan, of the Biennale in Venice, the Documenta in Kassel, the Alternative Attuali in Aquila and the Jeune Peintres Européens in Paris. Wherever necessary, we also want to protest vigorously against such exhibitions.

To the suggestion that our attitude implies a refusal to have any contact with the commercial world, we would reply that, since our only chance of survival as pioneers is by coming to terms with the present social system while awaiting the realization of our Utopia, we must consider the inevitable compromise. Therefore, whilst we refuse collective exhibitions which underline the refusal of responsibility, we will continue to hold individual shows with full responsibility, including the undertaking to denounce every type of compromise as well as the boundaries existing between research and production.

For the same reasons, we would accept to participate in those exhibitions – even collective – which encourage the realization of new experiences and cover the costs completely.

3 July 1968

Enzo Mari together with Enrico Castellani, Manfredo Massironi, Davide Boriani and Alberto Biasi.

Electronic Object 6B, 1970
Steel, perspex, neon, wood
Size 205 x 105 x 55
Collection the Artist

Willem Marijs was born in 1947
in Voorburg, Holland. Trained
in mechanics, The Hague, and
attended several academies. His
work is in the collection of
Frans Halsmuseum, Haarlem,
and in private collections.

*The work is an electronic object,
working with neon at a voltage of
3 x 1500 volts. When the object is
working, a number of quickly
changing colours are visible on the
screen.*

WILLEM MARIJS



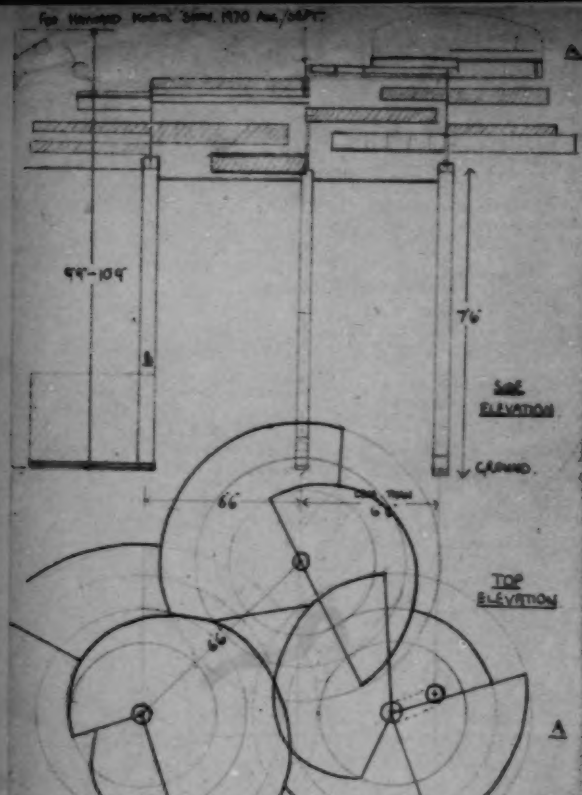
Moving Sculpture, 1969-70
Steel, aluminium, perspex
(mounted on floor and wall)
Size 300 x 300 x 330
Collection the Artist

Barry Martin was born in 1943 in Amersham, Buckinghamshire and studied at Goldsmiths' College and St Martin's School of Art, London, 1961-67. At present he teaches at Goldsmiths' College. He has exhibited at the Institute of Contemporary Arts, London; with the London Group 1969 and 1970; and most recently at the Serpentine Gallery, London in 1970. Works by Barry Martin are in the collections of The Arts Council of Great Britain; the London Borough of Bromley; and private collections.

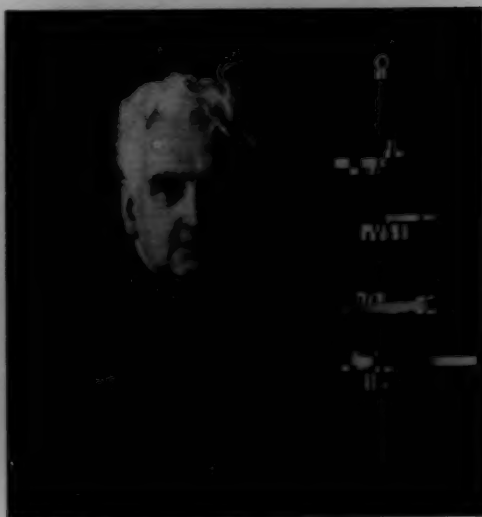
BARRY MARTIN



I am moving into new areas of investigation which need a fresh vocabulary, not only to escape the tired clichés of Neo-Dada, and the atmosphere of apathy and acceptance or confusion which surrounds art today, but more important, because I feel that movement is the only direction in which further positive progress can be made.



KENNETH MARTIN



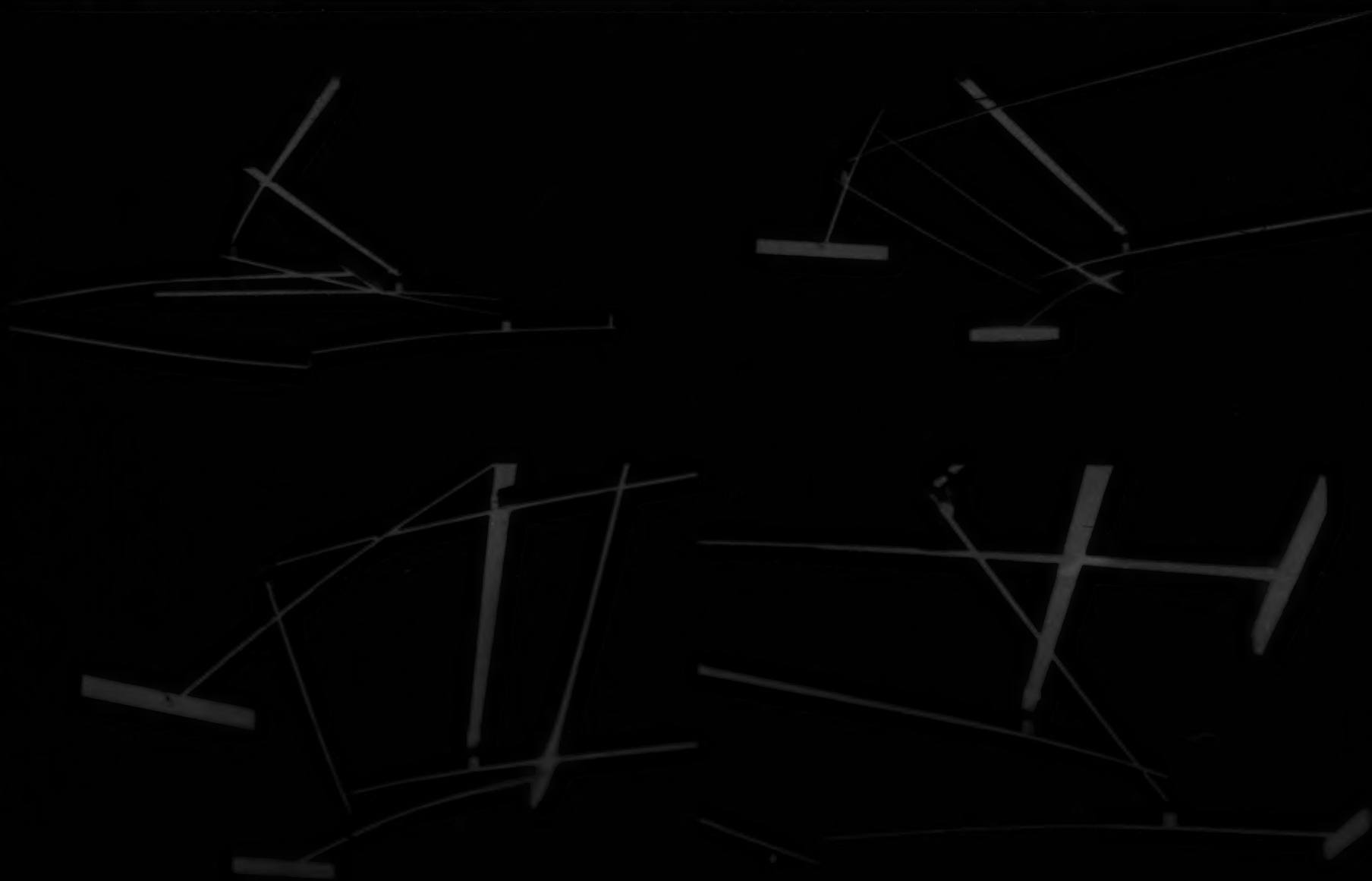
Linkage, 1968
Aluminium with fluorescent
paint (ceiling mounted)
Size 75 x 930 diameter (greatest
span)
Collection the Artist

Kenneth Martin was born in Sheffield in 1905 and studied painting in Sheffield and London. He made his first abstract paintings in 1948 and began making kinetic constructions in 1951, the first 'Screw mobile' being shown in 1953. He has taken part in international exhibitions since 1960. Personal exhibitions include Essays in Movement (with Mary Martin), Institute of Contemporary Arts, London, 1960; Lords Gallery, 1962; Axiom Gallery, 1967; Waddington Galleries, 1970. Mary Martin/Kenneth Martin, an Arts Council exhibition, is touring Britain, 1970-71. Works by Kenneth Martin are in the collections of the Tate Gallery; Arts Council of Great Britain; British Council; Bristol City Art Gallery; University of East Anglia; Delgado Museum, New Orleans; McCrory Foundation, New York and in private collections.

There is no doubt as to the direct appeal of movement. However, one has to explore kinetic in its simplest elements, both as process and appearance, with the simplest, evocative means. In so doing one returns to such considerations as to what is natural to the work of art, to the comparison of nature on the one hand with expression on the other. The infiniteness of nature opposes the finiteness of the work of art. The random and repetitive movement in nature and ourselves inspires the curiosity of the artist as to how to use and express it. The universality of construction and kinetic is his means.

Art International, Summer 1967

*Linkage was made for Cinétisme
Grenoble, 1968. It uses the same
proportional system as the Maison
de la Culture where the
exhibition was held. It is a
continuation of studies of linked
motion made in the mid fifties. It
uses reciprocal and dependent
motion. Black light concentrates
the eye on the repetitive
movement.*

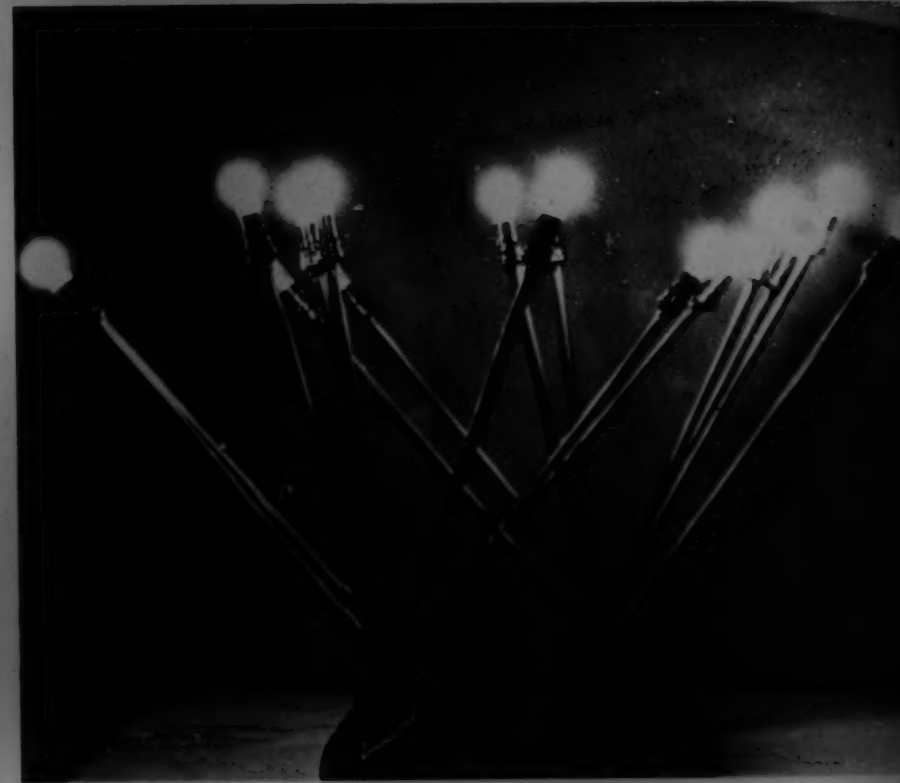
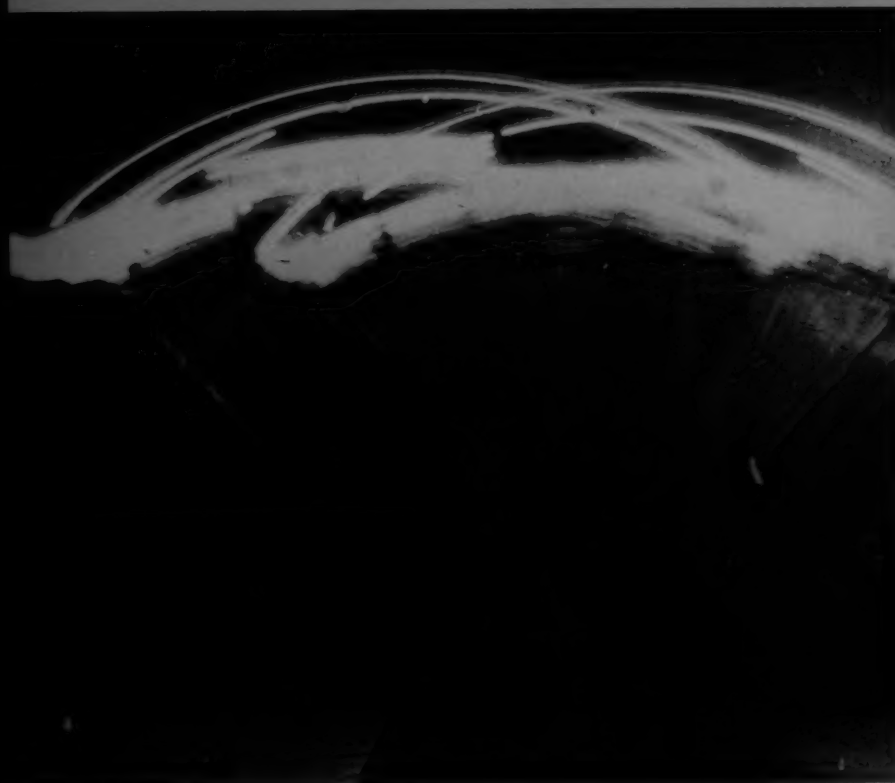
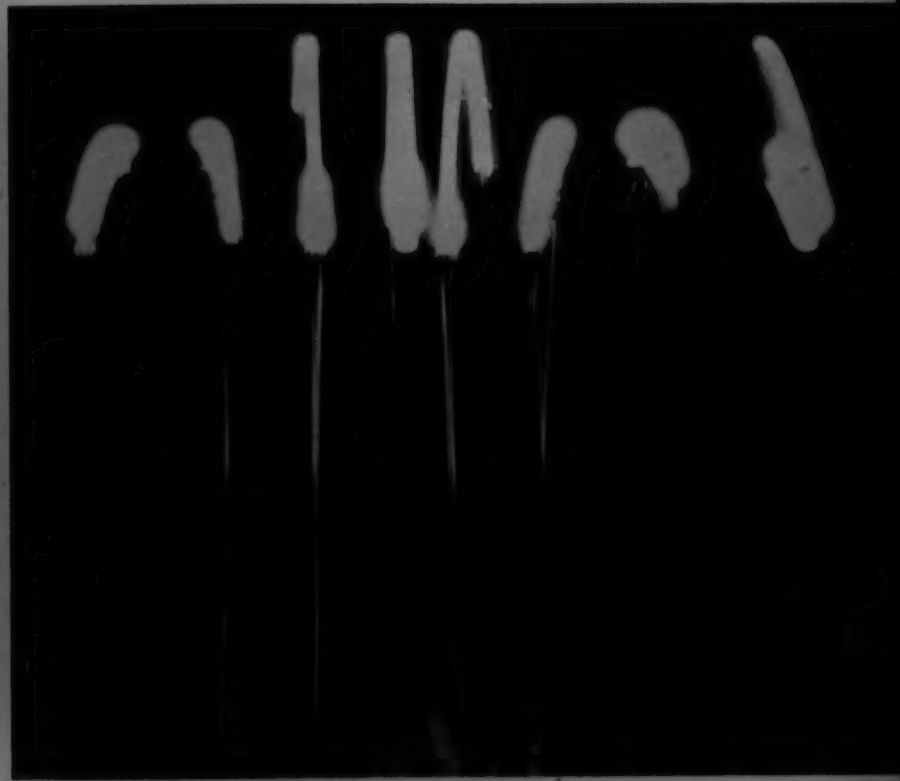
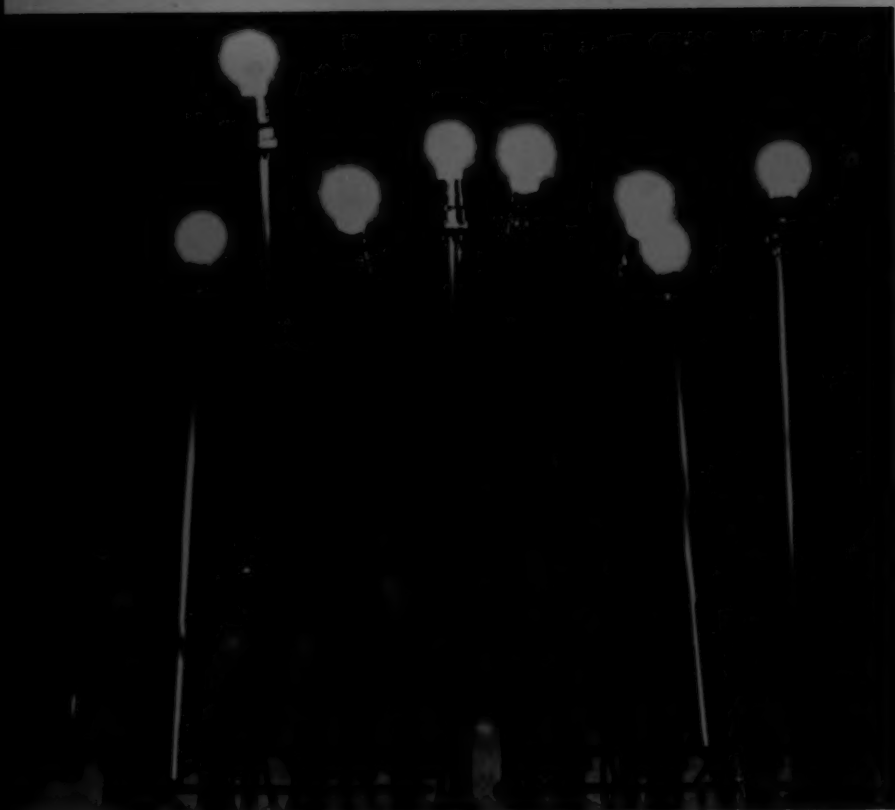


MS MG, 1969
Lights, motors
Size 50 x 75 x 55
Collection the Artist

Manfredo Massironi was born in 1937 in Padua, Italy. Massironi studied architecture in Venice. He was one of the founders of the Gruppo ENNE in 1959 and has shown extensively with the group and in important exhibitions of Kinetic art in Europe and the USA since then. At present engaged in research in the psychology of perception. Lives and works in Padua. Works by Massironi are in the collections of the Galerija Suvremene Umjetnosti, Zagreb; Civica Galleria d'Arte Moderna, Turin; Guggenheim Collection, Venice; Galleria Nazionale d'Arte Moderna, Rome; Muzeum Sztuki, Łódź; and in private collections.

MANFREDO MASSIRONI





CATALOGUES OF ART EXHIBITIONS ORGANIZED BY THE ARTS COUNCIL
OF GREAT BRITAIN REPUBLISHED ON MICROFICHE

Published on microfiche by:

Chadwyck-Healey Ltd
20 Newmarket Road
Cambridge CB5 8DT
England

Chadwyck-Healey Inc
623 Martense Avenue
Teaneck NJ 07666
USA

Date of publication and production of master: 1982

Series: The purpose of this series is to make available those catalogues that have lasting interest through their text or their illustrations. Catalogues and cumulations of titles in the series are available from the publishers.

Serial numbers: Each title is identified by a three-part serial number. The first part of the serial number designates the sales list in which the title was first announced. The second part indicates the agent of publication, i.e. the museum, gallery or organisation that was responsible for the publication of the catalogue. The third part of the serial number is the number allotted to that title.

Copyright, microfiche edition: Arts Council of Great Britain and Chadwyck-Healey Ltd.

Location of original: Arts Council of Great Britain, 105 Piccadilly, London W1V 0AU.

Technical data: Producing laboratory: Chadwyck-Healey Microform Publishing Services, 10 North End, Bassingbourn, Cambs., England.

CHARLES MATTOX



Compound Pendulum, 1968
Wood, fibreglass, steel
(activated by spectator)
Size 120 x 120 x 90
Collection the Artist

Charles Mattox was born in 1910 in Bronson, Kansas, USA. He studied art with Arshile Gorky, worked on the Federal Arts Project with David Smith among others, worked as a moulder, tool and instrument designer and as a special effects man in Hollywood. Taught sculpture at the University of California at Berkeley, 1960-63, at the San Francisco Art Institute, 1966, and presently at the University of New Mexico. One-man exhibitions from 1960 to the present have been in the University of California at Berkeley Museum; San Francisco Museum of Art; Lanyon Gallery, Palo Alto; Nicholas Wilder Gallery, Los Angeles; Howard Wise Gallery, New York; University of California at Irvine Gallery; Quay Gallery, San Francisco; Colorado College Gallery. His works are in the collections of The San Francisco Museum of Art; Los Angeles County Museum; Pasadena Museum; Smithsonian Institution, Washington; Art Gallery of the University of New Mexico, and in private collections.

From primary interest in motion and feedback systems, I have become more interested in new sculptural forms and an integration of other dimensions such as sound and light into my new work. Motion can be an obsession and is not enough in itself. To get more random movement is important. The forms, colour, sound and motion are all necessary and should all function in the intent or meaning of the work. The spirit of play is a part of the creation of my work and the intent is for the viewer (player) to respond as to a toy or game. I am interested in the technology and science of this era and its effect on our culture.



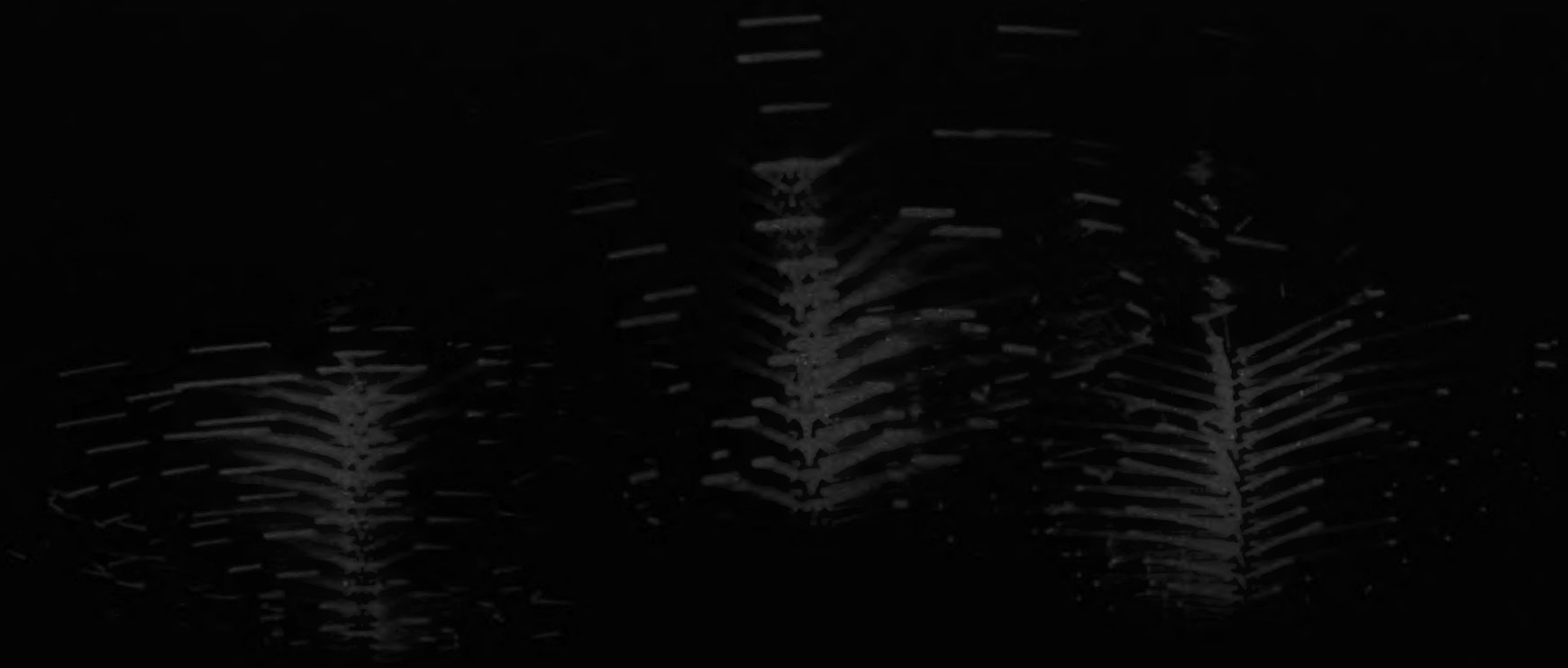
Startree, 1965-67
Perspex rods, fluorescent lamps,
and electro-mechanical
components
Size 90 x 300
Collection the Artist

Preston McClanahan was born in 1933 in Charleston, West Virginia, USA and studied at Cincinnati Art Academy 1951-55. Since 1959 he has lived and worked in New York. One-man shows at Contemporary Art Centre, Cincinnati, 1967, and Charleston Art Gallery, 1968. Participated in numerous group exhibitions from 1965, in USA, Mexico and Europe. Since 1967 has been involved in large scale environmental exhibitions such as 'Kinetic environment 1 & 2' and others in New York, Brooklyn and Philadelphia.

PRESTON McCLANAHAN



life or reality can be art
life or reality can be repeated as art
art to be art must be independent of
life or reality



MICHAEL McKINNON



Liquidisc Triptych, 1970
Acrylic plastic, non-miscible
coloured oils (with motor)
Size 90 x 91.5 x 180
Collection the Artist

Michael McKinnon was born in 1940 in Beulah, Australia and read Fine Arts at Melbourne University. He worked in the Plastics Research Department, Royal College of Art, London, 1965-68, where he began his first experiments in light and motion, and was co-founder of the 'Continuum' group with Robert Janz and Dante Leonelli. Exhibited at the English Speaking Union Gallery, Melbourne, 1965, and numerous group shows since 1967. 'Continuum' has been toured in England by the Arts Council and was shown at the Hayward Gallery in 1970. He won first prize in the multiples competition arranged in 1969 by the Ikon Gallery, Birmingham. His 'Tumbledisc' multiple is produced by Unlimited, Bath. Works by Michael McKinnon are in the collections of the Leicestershire Education Authority; IBM Collection; Natural History Museum, London; Arts Council of Great Britain and in private collections.



In a static work of art what the viewer experiences is the residue of a creative process. In my work I want the viewer to share the artist's traditional excitement in alternative solutions, in the continuous creation and alteration within the work itself. I have established the limits of the system and its defining elements which are: liquid, colour, catchment areas and speed of rotation. However, I have avoided insisting upon a single solution to the structural tensions that result from the juxtaposition of these elements. The system is committed to continue generating moments of creation within itself. But the work is never complete at any given moment, for while the artist's control extends to the division of areas and determines the operations which will act upon these elements, he makes no final assertion of the best possible arrangements. The assertion made lies in the equivalence of possible solutions. Every incident

of change is an equivalent truth: there is no hierarchy of truth or structure. The static position of a liquidisc is simply one phase. When in motion the emphasis shifts to the transformations occurring within the work, to the structure of the changes themselves. The principles of selection and construction involved in making a Liquidisc are, understandably, at some variance with those governing the creation of a static object – a painting or sculpture. Here it is important to seduce the eye and hold it, making the viewer desire to spend time becoming acquainted with the complexities of change and interaction within the system. Also it is essential to construct each system so as to derive situations of maximum possibility for change from a severely restricted number of areas and operations. The potentials for interrelation and for individual gesture of each liquid area have to be considered not for a single fixed design, but for an endless sequence of configurations.

The total experience of a Liquidisc is the sum of its phases.



CHRISTIAN MEGERT



Zoom, 1969
Mirror
Size 183 x 55 x 50
Collection the Artist

Christian Megert was born in Berne in 1936, and attended the art school there from 1952 to 1956. He lived in Sweden, Germany and in Paris until 1962, but now lives in Berne. In 1956 he painted a white monochrome picture, and has subsequently made many experiments in monochrome. His first kinetic object was made in 1959; the first mirror/glass object in 1960; the first kinetic/light object in 1962. He has had one-man shows at Galerie Köpke, Copenhagen, 1959 and 1961; Galerie Punt 31, Dordrecht, 1961; Galerie Kasper, Lausanne and Galerie d, Frankfurt, 1963; Galerie Knöll, Basle, 1964; Galerie Accent, Brussels, Galerie Loehr, Frankfurt, 1966; Op Art Galerie, Esslingen, Galerie Vismara, Milan, 1967; Galerie T Gerber, Berne, 1967 and 1968; Galerie Reckermann, Cologne, Galerie Swart, Amsterdam, 1968; Galerie Bischofsberger, Zurich and Galerie Latzer, Kreuzlingen, 1969; Galerie Ernst, Hanover, Galerie Krebs, Berne, Galerie Lichter, Frankfurt, 1970. Megert has shown widely in group shows, with Group Zero and in kinetic shows in Europe. Works by Megert can be found in the collections of the Progressive Museum, Basle; Albany Museum and Museum of Modern Art, New York; Kunsthalle, Recklinghausen; Städt. Kunstsammlung, Berne; and the Musée des Beaux Arts, Montreal.



FRANCOIS MORELLET



Grilles Déformables
Chromed steel
Size 157 x 157
Collection Denise René Gallery,
Paris

François Morellet was born at Cholet, France in 1926, and began painting in 1946. From semi-representational work he had progressed to a rigorous geometrical abstraction by 1956. He was one of the founders of the Groupe de Recherche d'Art Visuel (GRAV). He has had one-man shows at 'Der Spiegel', Cologne, 1966; Denise René, Paris, and Indica Gallery, London, 1967; Rijksmuseum Kröller-Müller, Otterlo, 1968; Plus-Kern Gallery, Ghent, Swart Gallery, Amsterdam, Halfmanshof Gallery, Gelsenkirchen, 1969; Gallery M, Bochum, 1970. He has shown widely with GRAV and in group shows of kinetic work in Europe, as well as making light programmes, ballets and films. He has been involved in the programmed lighting of the French Pavilion at Osaka, 1970.

Artist's Description

Producer: Morellet

Work: Grilles Déformables

Conception: systematic

Temperature: cold

Surface: hard

Precision: maximum

Inspiration: minimum

Control: at all stages of production



HANS WALTER MULLER



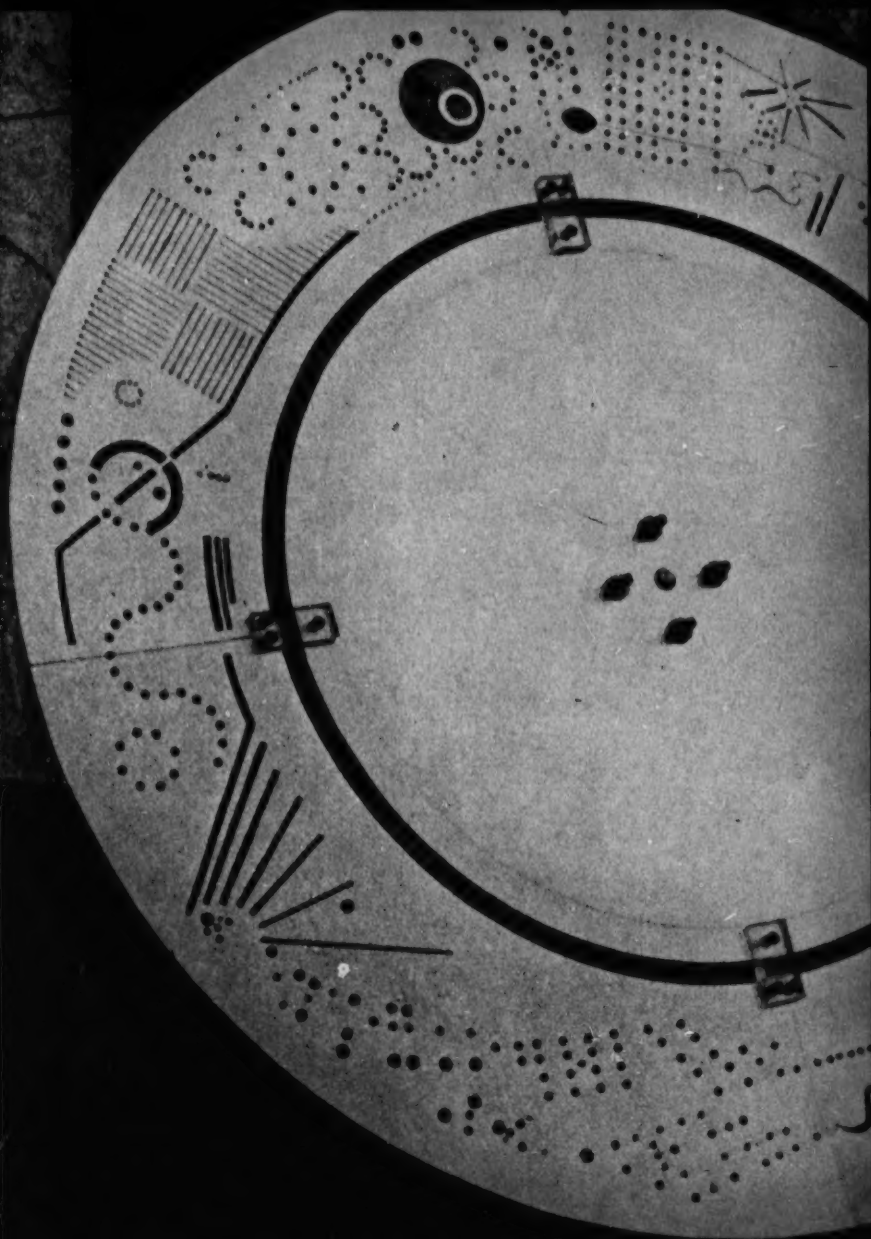
Machine 'M' and 'Disque Visuel',
1968-69

Wood, screen, projectors
Size of environment 300 x 240
Collection the Artist

Hans Walter Müller was born in 1935 in Worms, Germany. After qualifying as an architect and engineer at Darmstadt in 1961, he won a scholarship to the Ecole Nationale Supérieure des Beaux-Arts and l'Institut d'Urbanisme in Paris, researching into prefabrication and the organization of space through light. After a period of employment as an architect he showed 'Genèse 63' at the Maison des Beaux-Arts in 1963. One-man show at Galerie Sophie Delachaux, Paris, 1964, since when he has developed the Machine 'M' concept and exhibited throughout Europe. The machines have been used for films ('La Plaine et le Couteau'), exhibitions and publicity. Müller had a retrospective exhibition at the Maison de la Culture, Bourges, 1969, and has participated in recent environmental exhibitions in Paris and Alsace.

Art seems to be becoming an important element in our everyday life and may become a means of enjoyment and culture for all without being in any way a matter of privilege. The age of technical production has set us free from perpetual work and has offered everybody the gift of free time for such enjoyment. In future the possibilities of multiple production of works of art will have to be envisaged at the very moment of their conception. The artist, as soon as he conceives of his creation, will envisage spectator participation. And when the spectator manipulates a work he will produce an 'original'. The two elements, therefore, in this new notion of a work of art are conception, on the part of the artist, and manipulation, on the part of the spectator. Photographic technique has enabled us to reproduce classical works of art with amazing accuracy, even while altering their original dimensions, and all this with no intervention by the artist. But all we were doing with our marvellous technical prowess was endlessly reproducing the contents of the great art galleries instead of using it to create new art. Recordings and sound-guides afford opportunities of selecting any sort of acoustic or optical effect according to our taste and from a more or less wide range. But, alas! we keep on choosing from the archives. Wireless and television constrict us, they keep supplying us with mere information. Tape-recordings and records are just like the sound-guides and the colour-slides . . . museum stuff. Everything has a predetermined beginning and end. The listener and the viewer cannot actively participate in the event. Machine 'M' and disques optiques: the machines 'M' are implements. They enable the projection of given compositions at each phase of the event. The end-product is strictly determined in the initial conception, which is realized, and then fixed by perforations in the composition disc (disque optique interchangeable). The events can be noted and the spectator can intervene and transform the basic

composition to please his own taste. So a choice can be made, and there is freedom within a given order. Superimpositions of movement can be regulated so that transformations occur without repetitions. There are no beginnings and no ends. This research is being carried out to discover the laws which govern moving colours and structures; laws which become the basic elements of future compositions. And they will be exploited in the fields of architecture, medicine and stage-design, and in the work of art institutes and of advertising, and so on.



BRUNO MUNARI



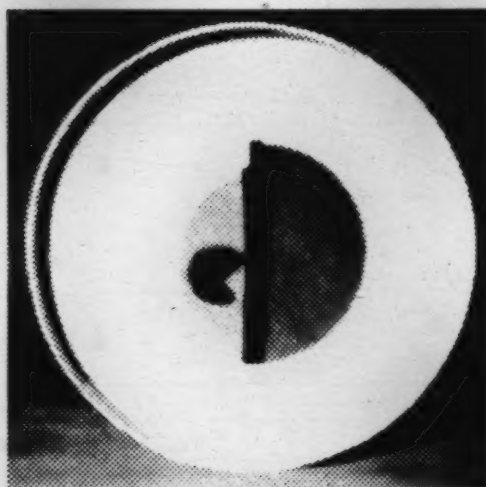
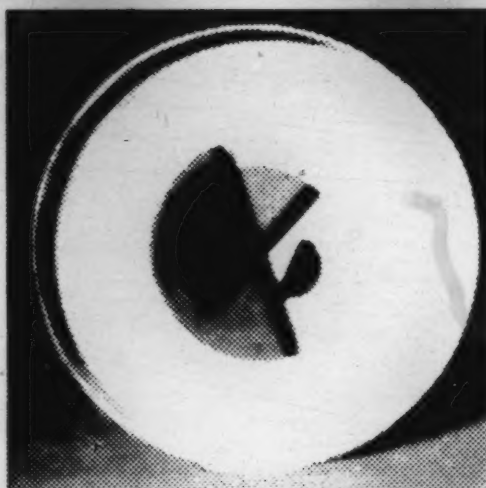
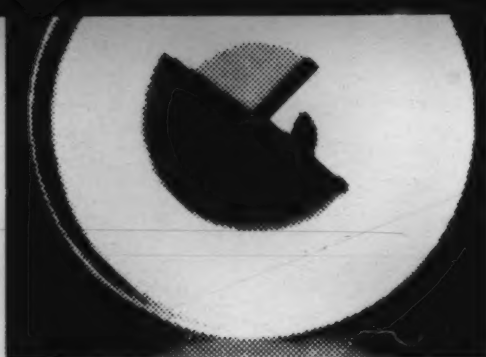
Macchina Inutile, 1944
Painted wood, nylon thread
Size 60 x 1.5
Collection Danese, Milan

Ora X, prototype 1945, realized
1963
Aluminium, plastic
Size 20 diameter x 6
Collection the Artist

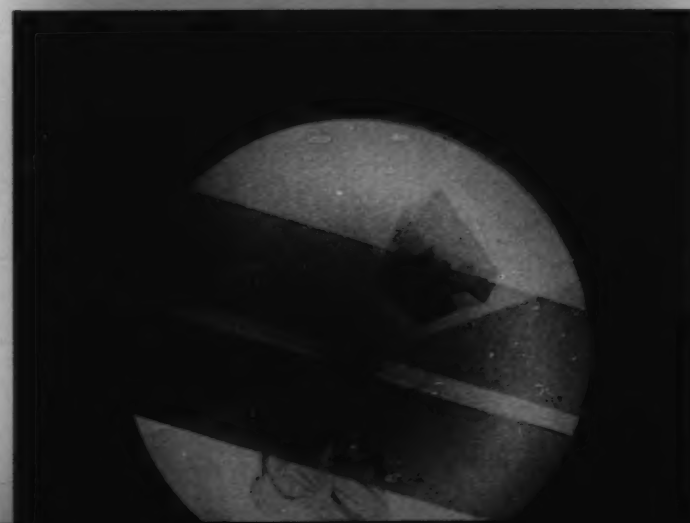
Polariscop No.3, 1969
Polarized plastic
Size 30 x 30 x 30
Collection the Artist

Bruno Munari, born in Milan in 1907, lives and works there as a graphic designer, author and organizer of exhibitions. In 1933 he exhibited his first abstract paintings, and in 1935 his first 'useless machines'. His 'Manifesto of Mechanism' was published in 1938. He has twice been awarded the 'Compasso d'oro' for his work as a designer. He has created fountains for the Milan Fair and exhibited his direct, and polarized, light projections in Tokyo, London and New York. His works, design, graphics, paintings, projections and sculpture, are in the principal museums of modern art.

In my view we now need to conduct researches with a view to re-founding a true, objective visual language, free from any personal element and aesthetic prejudice, a visual language which can naturally and intuitively communicate the dynamic factors determining our new knowledge of the world. A true visual language, that is, comparable with that which characterized old-fashioned static art in the days when it was thought of as a craft. My own researches lie in the direction of experiment and the mastering of these new dynamic multi-dimensional visual means of expression. Conducted as objectively as possible, they set out from scientifically established facts and from technical and psychological data concerning creation and perception.



Ora X



Polariscop

NAM JUNE PAIK



Electronic Television, 1969
Adapted television set
Size 60 x 60
Courtesy of Galeria Bonino, New
York

Nam June Paik was born in Seoul, Korea in 1932. He graduated in aesthetics from the University of Tokyo in 1956. He studied music, art history and philosophy at the University of Munich, Freiburg Conservatory and the University of Cologne in Germany between 1956 and 1958. Since 1958 he has done experimental work in the studio for Electronic Music of Radio Cologne. Since 1959 he has had many one-man shows and performances in Europe, USA, and Japan, and appeared in joint concerts with Charlotte Moorman. In 1965 he participated in John Cage's 'Variation No.5 with Electronic Television' at the Philharmonic Hall, New York.

Someday artists will work with capacitors, resistors and semi-conductors as they work today with brushes, violins and junk.

Exhibition catalogue, *Nam June Paik: Electronic Art*, Galeria Bonino, New York 1965.

I have treated cathode ray tube (TV screen) as a canvas, and proved that it can be a superior canvas. From now on, I will treat the cathode ray as a paper and pen. . . . If Joyce lived today, surely he would have written 'Finnegan's Wake' on videotape, because of the vast possibility of manipulation in magnetic information storage.
From an unpublished essay
Rondo Electronique, 1968.



Flying messages

Aside from gas inflated floating letters of many sizes and configurations and aside from the biblical flame letters, close up and remote, over the sea and the desert - there will be projected letters and floating messages. Space flyers abandoning their ships will leave orbiting messages as sailors left bottled messages - bottle posts in the sea. All these messages, political or poetic, or both in one, hopefully, are not to mess up the cosmos as billboards have messed up California. Any flying messages are temporary by nature.

Kinetic sculpture

The mere fact that a sculpture moves may help the spectator understand the nature of movement. On the other hand I see no virtue per se in sculptures being kinetic because different kinds of sculpture make people understand different kinds of things. A kinetic object is as much of an object as any other object if it does not turn into a more 'sociable' object by virtue of its being kinetic. A good kinetic sculpture goes out to people and makes itself available.

The last really striking kinetic museum exhibition that I have seen took place in 1961 at the Stedelijk Museum in Amsterdam. Any ambitious show after that which does not attempt to provide subtler or more specific environmentally conditioned experiences for the viewer must look superfluous now. If there is no cybernetic exchange between the viewer and the environment, a mere show of moving objects will be nothing but a kinetic bazaar with lights flickering and wheels rattling.

The expansive character of a truly kinetic work of art naturally resists display of the kind that emerged from group exhibitions of painting and sculpture.

The academic concept of a kinetic sculpture as it has been adapted and advertised by Denise René as the kind of object/box/item/merchandise on which something flickers or turns is geared to the

collector's or museum's needs, i.e. it is designed to be hung on a wall or placed on a pedestal. The potential of a kinetic set of conditions (versus a 'kinetic object') is to create an environment on a large scale, that abandons the petty, perspectival, renaissance viewer-object relationship and provides an experience that is analogous to an experience of the universe, i.e. the viewer is surrounded by phenomena which he chooses from, reacts to, influences. The potential of kinetic sculpture is closer to Chartres cathedral and moon flight than to the reactionary and tame products of abstract expressionism.

To establish self-made elitist rules to keep anything, and any art for that matter, from being measured by crude standards of emotion and excitement of life always has been an academic game. Elitism is a particularly narcissistic form of self-delusion and intellectual cynicism. Admittedly it must take guts to look back at one's life spent on painting stripes, n'est ce pas, Michael Fried?

Kinetic art is a social art by virtue. It is mature enough now to expand, to live without the babblers and to address open minds everywhere. I find it significant that kinetic art has had a special appeal to children for a long time.

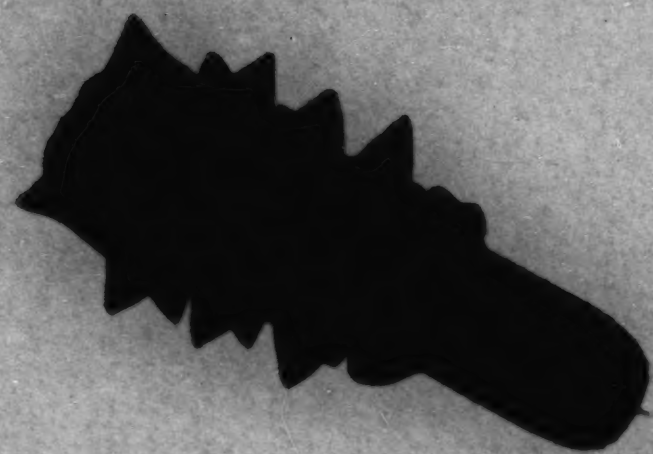
from 'Things to Do', a casual book about art and our environment by Otto Piene, unpublished.

OTTO PIENE



London Windsock, 1970 (on flagpole over liftshaft of Hayward Gallery)
Spinnaker cloth, nylon rope, steel wire, brass snaps and grommets
Size 810 x 100 (flagpole 1000)
Collection the Artist.

Otto Piene was born in 1928 at Laasphe, Westphalia, Germany and studied at Munich, Düsseldorf and Cologne from 1948 to 1957. Co-founder of the Zero Group 1957, producing his first monochrome stencil paintings in that year, smoke paintings and light performances in 1959, first fire paintings and light machines 1960. His interest in inflatables stems from the hot air balloon demonstrations 1961. He has been a visiting professor at the University of Pennsylvania, 1964, Karlsruhe Art Academy, 1968, and a Fellow at the Centre for Advanced Visual Studies, MIT, since 1968. He has lectured and written extensively on kinetics and his own work. Public commissions include light sculptures for the City Opera House, Bonn 1964-65; the Senate and House of Representatives chambers, Honolulu, Hawaii; the new University in Constance; the Westfälisches Landesmuseum, Münster, and many others. Much of Piene's considerable energy goes into performances and events, involving inflatables, projections, smoke and fire of which the three-day Citything Sky Ballet in Pittsburgh this year was the most spectacular. He has shown widely, with Group Zero, and has had several one-man shows each year since 1959. Works by Otto Piene are in public collections in Europe, Japan, Ireland, Canada and the USA and in many private collections.



CHUCK PRENTISS



Round Number 5, 1970
Dielectric coated glass,
stainless steel, lights
Size 60 diameter
Collection Esther-Robles
Gallery, Los Angeles

Chuck Prentiss was born in 1942 in Southern California and was educated in Los Angeles. One-man show at Esther-Robles Gallery, 1968 and many group shows since. Works by Chuck Prentiss are in private collections in the USA.

The new art technology, coupled with kinetic light sculpture, is in essence my media. Strands of lights of every conceivable colour spread through the structures to reach the illusion of the depths of infinity. This idea is accomplished by the relatively uncomplicated use of transparent, white, low-wattage light bulbs suspended on a rotating armature, a durable electric motor and dielectrically coated glass. All component parts are encased in brushed stainless steel cabinets. The depth effect is created by an intricate placement of the glass panes, and the colour spectrum is derived from my long experience of trial and error in the application of dielectric coatings. This is done under high vacuum and subsequent metallic deposition. In 1967, after having attended El Camino College where I majored in physics, I was recruited because of my studies there by the aerospace industry. I was employed in the vacuum coatings for the industry. While there I gained the added experience necessary to obtain the coating spectrum in my personal work. My initial structures were noticed by Esther Robles, who encouraged me by immediately offering me the possibilities of exhibitions and long-term representation with her and her husband, Robert Robles. Since that time my work has been continuously on view there, as well as other exhibitions which they have arranged for me.



WILLIAM PYE



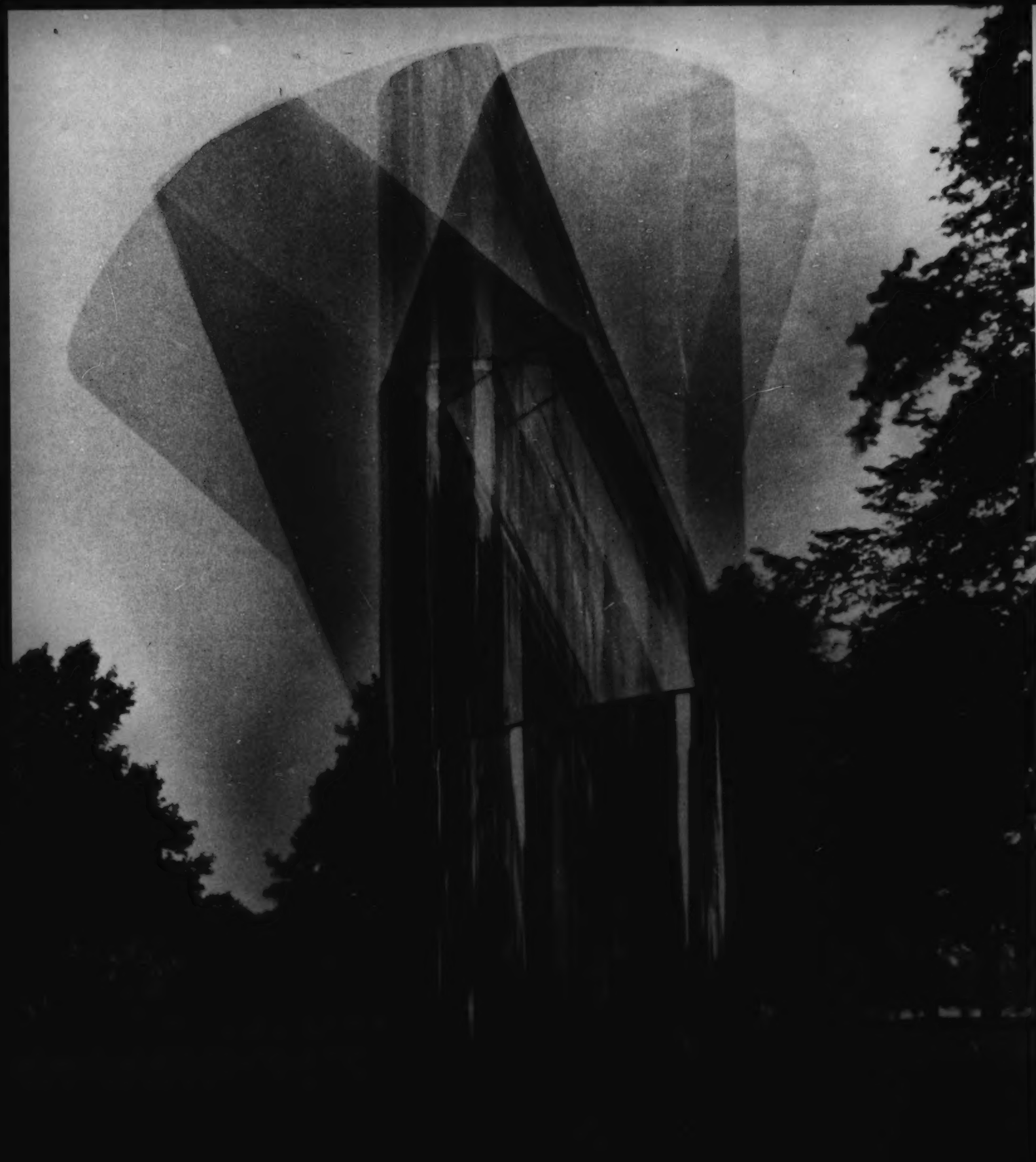
Revolving Tower - an elliptical riddle, 1970
Stainless steel (electronics by Philip Hodgetts)
Size 240 x 75 x 75
Collection the Artist

William Pye was born in 1938 in London, educated at Wimbledon School of Art and the Royal College of Art, graduating in 1965. Lecturer at the Central School of Art and Design, London, and visiting lecturer at other art schools in Britain and USA. He has exhibited since 1964 in Britain, Italy, Germany and the USA, with one-man exhibitions at the Redfern Gallery, London. Works by William Pye are in the collections of the Art Council of Great Britain; Museum of Modern Art, New York; Contemporary Art Society; University of Warwick; Royal Albert Memorial Museum, Exeter.

The simple act of cutting a straight tube at 45° and turning one of the pieces through 180° and placing the two elliptical facets together to produce a 90° mitred corner I still find curiously intriguing, and it surprises me that such a simple act should have such a transforming and complicating effect.

Quote from 'Notes on Sculpture', Art & Artists, May 1969.

Subsequently the idea of units that appeared to form a cylinder when stacked in one position, made to revolve against each other, thus disintegrating the single rigid vertical into many varieties of form, suggested an interesting challenge: how to make the pattern of movements have some comprehensible form, as opposed to a chaotic, aimless and endless locomotion.



GEORGE RICKEY



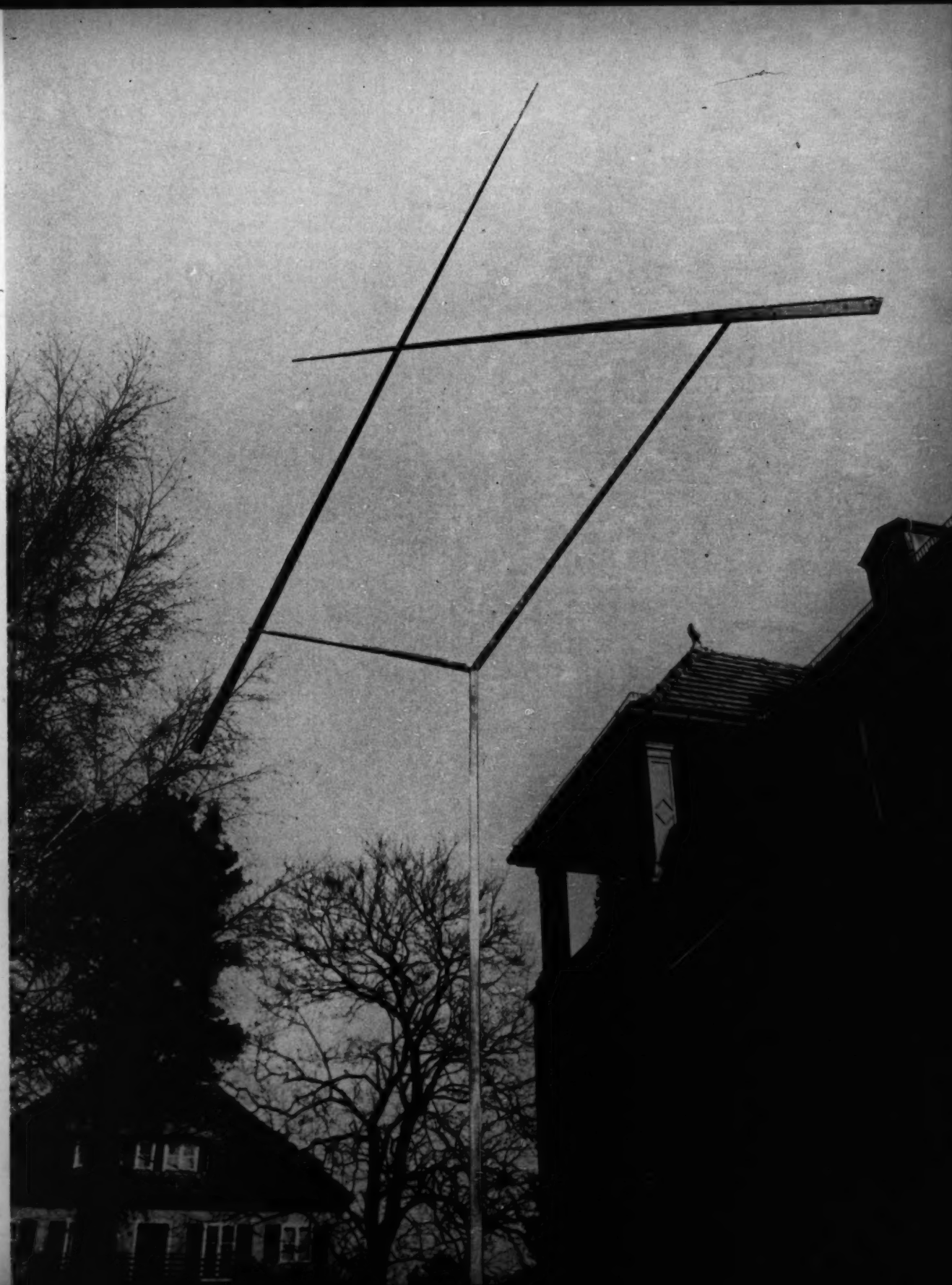
Two Lines, Oblique, 1970
Stainless steel, with steel base
Size 900 high, arms 480 wide,
rotation through 360°
Collection the Artist

George Rickey was born in South Bend, Indiana in 1907 and grew up in Europe. He was educated at Balliol College, Oxford, where he took an MA in European History. He studied art at the Ruskin School, Oxford; Académie Lhote, Paris; Institute of Fine Arts of New York University; the University of Iowa; and the Institute of Design, Chicago. He was awarded the first Carnegie Grant as artist-in-residence at Olivet College, and later at Knox College, and continued in college teaching, including five years as chairman of the Tulane University Art Department, until 1966 when he resigned from the School of Architecture at Rensselaer Polytechnic Institute in order to devote himself full time to his own work. He had turned from painting to sculpture in 1949. He has continued some teaching activities and was Visiting Artist, Dartmouth College, 1966, Regents Lecturer, University of California, Santa Barbara, 1967.

In 1968 he was invited by the Deutscher Akademischer Austauschdienst (German Academic Exchange) to live and work in Berlin, where he remained until June 1969. He participated in Documenta IV in Kassel, Germany and the Venice Biennale in 1968. In 1969 he had one-man exhibitions in Berlin, Nürnberg, Munich and Rotterdam, and was invited to Osaka by the Japan Iron and Steel Federation to make a sculpture now installed at Expo 70. He has recently completed and installed commissions for the National Collection of Fine Arts, Washington, and the Omaha National Bank, Omaha, Nebraska and is completing major sculptures for the University Klinikum, Berlin and Neue Heimat Bayern, Munich. His book Constructivism: Origins and

Evolution, a study of the development of that movement from its origins in Russia to its post war international importance, was published in 1967. He has had numerous one-man exhibitions in the USA, Europe and Japan and participated in many group shows of kinetic art. Works by George Rickey are in the collections of the Albright-Knox Art Gallery, Buffalo; Museum of Fine Arts, Boston; Kunsthalle, Hamburg; Museum of Modern Art, New York; Whitney Museum, New York; Tate Gallery, London; Oakland Museum; Rijksmuseum Kröller-Müller, Otterlo, Holland; Nationalgalerie, Berlin; Corcoran Gallery of Art, Washington, DC; National Collection of Fine Art, Washington, DC.

Since I began to concentrate more and more on 'movement itself', I wanted to simplify the elements which moved. The lines have been an attempt to reduce the design to essentials. When the weights above and below the fulcrum are almost equal (as well as from side to side) a very sensitive and responsive mechanism results. The more nearly the balance approaches instability, the slower will be the rocking movement. This slow and sensitive device is the raw material, so to speak, of which the objects are made embodied in metal made more visible by its surface treatment. The visible movement is the design. The pace and period of that movement, sometimes speeded up by a stronger air current, are qualities of the design. The geometry of the lines was never fixed, though limits were. Since the lines moved, there was no correct position. The motive power was always the wind (or, if indoor conditions required it, fans or a ventilation system). The movement thus was a vital contribution from nature to the design. The sculpture does not represent nature; it is nature - nature's forces at work in the air (orig. wind), in gravity, in friction, in the laws of motion.



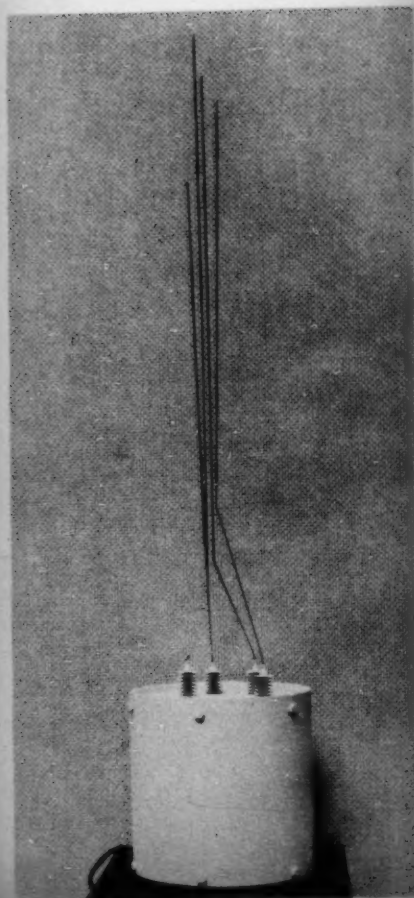
Lightning Rods, 1968
Upright rods and cylindrical
steel base
Size 30 diameter x 120 high (base,
25 diameter x 30 high)
Collection the Artist

Gary T Rieveschl was born in
1943 in Cincinnati, Ohio. He
graduated from Phillips
Academy, Andover,
Massachusetts in 1961 and then
from 1961 to 1963 was a student
at Harvard University, spending
six months at MIT. In 1964 he
returned to Harvard and
graduated in 1966. 1967-69 he
became Research Affiliate at the
Centre for Advanced Visual
Studies, MIT. Works by Gary
Rieveschl are in the Addison
Gallery of American Art,
Andover, Mass., and private
collections.

GARY T RIEVESCHL



The elements of kinetic art are forces as phenomena. Pure electrical energy is a primary and primordial life-force of the first order. It is invisible in our daily lives, lurking in wires and batteries ready to jump out and bite. This furtive condition has reduced its visual impact to secondary or causative effect and its emotional impact to fear. I have simply sought to make the invisible visible again, to release electricity from its one and two dimensional cages into free space. Take heed of lightning in the summer storm.

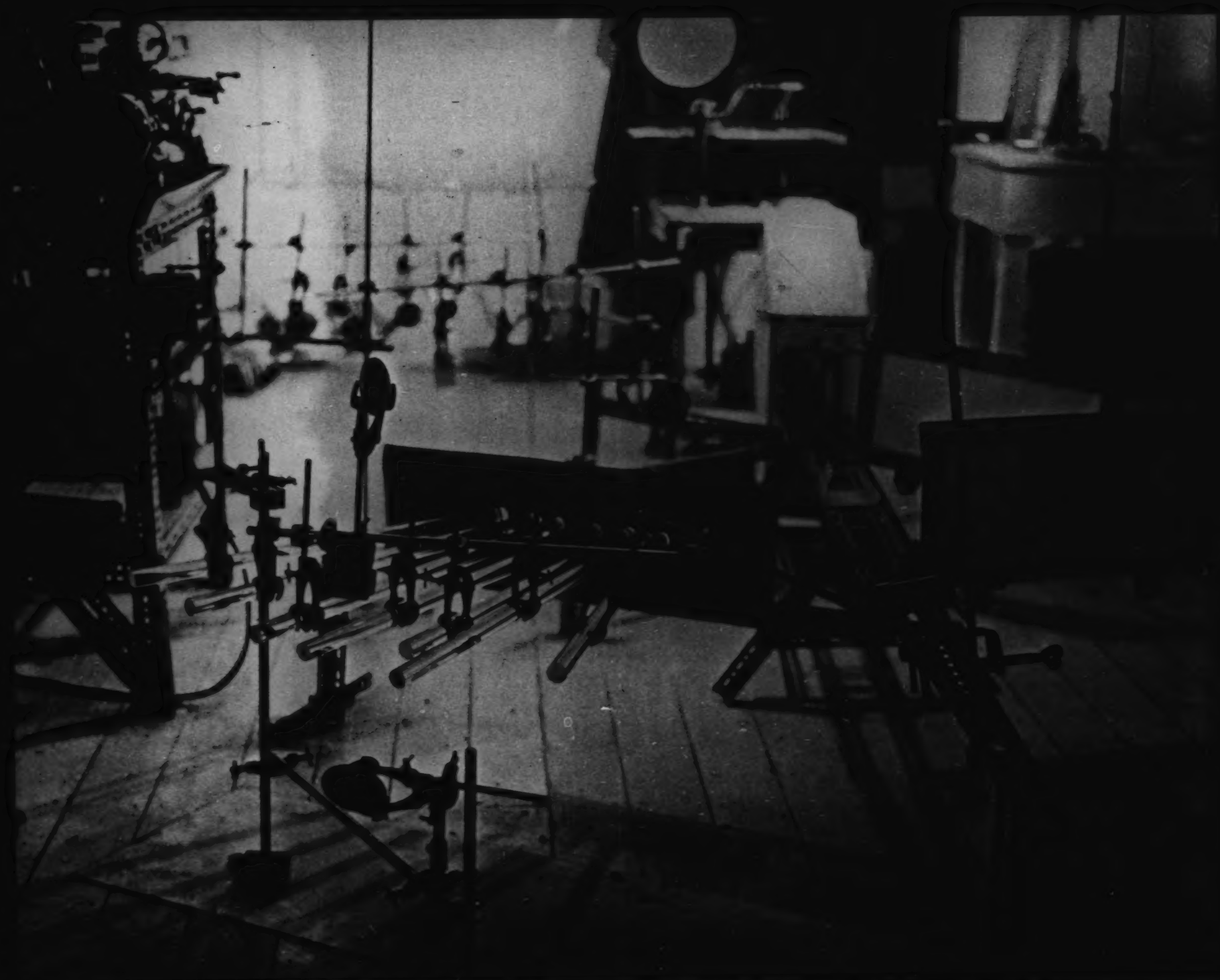


Light as a System of Energy
(sectional study of shade and
growth), 1970 (preliminary
research 1967-70)
Plastic, metal, electronic
components
Size 120 x 120 x 180
Collection the Artist

Marcello Salvadori was born in
Florence in 1928. He studied at
the Academy of Fine Arts and
the School of Architecture,
Rome, 1946-54 and has since been
mainly concerned with
interdisciplinary studies in the
arts. He came to England in 1955.
Since 1961 he has devoted
himself to the promoting of an
educational and research centre
(CASSA) dedicated to the
relation between science and
art. He had a one-man
exhibition at the Signals
Gallery, London, 1965.

MARCELLO SALVADORI





I have set up a research project on Light as a system of energy. Study groups have been divided. The object on show is work in progress towards the understanding of Shade and Growth. Some of the background research has been programmed and computerized to simplify a pattern of complex information.

The engagement in didactic projects and the use of interdisciplinary systems such as ecology and cybernetics is part of a long-term programme of research in exploring new analogies and knowledge in the visual arts. A varied group of students has been attached to this project for research, handling the

complexities of inter-acting science and art and establishing a way and approach to research.

Maquette of 'Light as a System of Energy'. The photograph shows work in progress towards a larger study 'Shade and Growth'.

NICHOLAS SCHOFFER



'Chronos VIII' in mirrored
prism, 1967
Chromed steel, motors, lights
and mirrors
Size 320 x 120 x 130
Collection Denise René Gallery,
Paris

Nicholas Schöffer was born in 1912 in Kalosca, Hungary and studied at the Academy of Fine Arts, Budapest, and later in Paris, where he has since lived. He developed his theories of 'Spatiodynamisme' in 1948 and has subsequently produced a stream of works which have profoundly influenced kinetic art. He has been concerned with very large scale works, the most important perhaps, being the 52 m. high tower at Liège in 1961, working in conjunction with an elaborate audiovisual spectacle on the Congress Hall façade. He has had numerous one-man shows, the most recent at the Denise René Gallery in 1970, and has participated in most important exhibitions of kinetic art. He was awarded the Grand Prix at the Venice Biennale 1968. His works are now widely available in the unlimited series 'Minieffets' and 'Miniscultures'. Works by Schöffer are to be found in numerous public and private collections in Europe and the USA.

Non-Formalism

In the present phase of the evolution of artistic investigations, I consider that the work must be absolutely separated from the problem of form. The formal aspect of works must be reduced to a minimum of signs that can create a visual (or audio-visual) language in the service of programmings of all kinds, diversified to their extreme limits, in order to realize temporal and microtemporal structures, organized with a view to obtaining amplitudes varied by the combined progress of the events (complex or simple), and their retroactions. The visual or audio-visual complex thus created can have deeper repercussions in the psychophenomenological field of the spectator, can take charge of him, so to speak, stimulate him or relax him, through aesthetic products that are all the more effective as they are non-formalist, and immaterial in their essence, in which durations replace volumes, and temporal rhythms the configurations of surfaces. The programmed climates have an immediate power of communication. Cybernetics give the work a flexibility of adaptation hardly known until now; the work becomes organic, rising to a level never yet reached. The work lives and adapts itself as much to the one who perceives it as the latter lives and adapts himself to the climates created by the works, which are finally but his own prolongations transcended with a view to his own improvement. These considerations likewise relate to the art of building on the scale of architecture, of city planning and of the organization of a territory. Here, too, diversified but simple and effective languages will create structures with materials such as time, light, sound, climates and space. The complex programmings of these elements lead us toward structured ensembles, in which cybernetics maintain the optimum balance in a fluctuating permanence.

From 'La Ville Cybernétique',
1969.



JAMES SEAWRIGHT



Network I, 1968-69
Metal, plastic, electronic parts
Size 90 x 90 x 45
Collection the Stable Gallery,
New York

James Seawright was born in 1922 in Jackson, Mississippi, USA, and educated at the University of Mississippi and the Art Students League, New York. Since 1963 he has been the mechanical supervisor and consultant to the Columbia Princeton Electronic Music Centre, and he has also taught at the School of Visual Arts, New York; Rutgers University and at Princeton University. Seawright has had one-man shows at the Stable Gallery, New York, 1966 and 1970; The Philharmonic Hall, Lincoln Centre, 1968; Duke University, 1969; Princeton University, 1970; and has participated in many group shows including 'Cybernetic Serendipity' at the Institute of Contemporary Arts, London, 1968. Works by Seawright are in the collections of The Museum of Modern Art, The Whitney Museum of American Art, The Solomon R Guggenheim Museum, New York; Rose Art Museum, Brandeis University; Larry Aldrich Museum, Ridgefield; Chrysler Art Museum, Provincetown; Howard Lipman Foundation and many others.

The following quotations are James Seawright's answers to questions by Douglas Davis:

The particular approach I have taken toward applying technological principles to sculpture has been determined in a large part by my reaction to the example I have seen set in music . . .

. . . any work I might attempt to produce would have to have some essential validity within the electronic medium . . . I generally think of motors, lamps, circuits, etc, as they are used in my sculptures as having little interest in themselves; it is the way they are integrated into a functioning system that strikes me as the essential application of contemporary technology.

There is nothing about the materials that imposes a different kind of limitation than the limitations any other materials impose on a sculptor. . . . Working directly with the materials as I do, I find that there is a great deal of spontaneous arrangement and rearrangement possible with the possible components of a given piece, at least as far as the visual appearance of the sculpture is concerned.

. . . Electronic music is perhaps more highly developed at this point, but the same basic dichotomy is present: on the one hand those composers and artists who are concerned only with the act of being involved with technology; and on the other hand, those who use technological means to achieve an end more relevant to the world we live in . . . I suspect that as more and more artists begin to concern themselves with the possibilities of technology, there will emerge a more general view that technology simply offers extraordinarily powerful tools for accomplishing the aims of artists, just as it has enabled people to fulfil many of their material needs.



No.1.770, 1970

Aluminium sheet, compressed
air

Size 40 x 40 x 200 closed

40 x 400 x 30 open

Collection the Government of
the Netherlands

Ray Staakman was born at The Hague in 1941 and studied at the Academy for Industrial Design, Eindhoven. He has had one-man shows at the Galerie Swart, Amsterdam, 1967; Frans Halsmuseum, Haarlem, 1968; the Galerie de Berekuil, Breukelen and the University of Technology, Delft, 1969, and has participated in many group shows since 1964, most recently in the 'Visions, projects, proposals' exhibition, Midland Group Gallery, Nottingham Festival, 1970. Works by Ray Staakman are in the collections of the Stedelijk Museum, Schiedam; Frans Halsmuseum, Haarlem; Gemeente Museum, The Hague; Groniger Museum, Gronigen, and in private collections.

RAY STAAKMAN



Kinetic art is like all other kinds of plastic art. However because of the movement it has a larger visual attractive power. But this doesn't change anything in its capacity to transmit communication. (To communicate is to relay information to other people, which enables them to take part in a process of thinking themselves). Art that is produced now is on behalf of a public that consists of a very small group, always the same people, who are not receptive to the information and who interpret it as is opportune for them, or who are apathetic.

That's why you should hit visitors in their faces, attack them personally so that their direct action is necessary, so that a situation arises which requires engagement.

ray staakman
date: july '70
scale 1:10
work no.1.770

closed position

5 positions

open position

1000

Anti-Gravity, 1969
Steel panel relief, wooden base,
three electromagnets
Size 90 x 240 x 40
Collection the Artist

Takis was born in 1925 in Athens, Greece and produced his first sculpture in 1946. He lived in Paris and London 1954-58, and since then has divided his time between Europe and America. He has been a Fellow at the Centre for Advanced Visual Studies at MIT, Cambridge, Massachusetts. Takis has had numerous one-man shows in Europe and the USA and participated in a large number of group shows and manifestations. A series of multiples 'Signals' have been published by Unlimited, 1966. Works by Takis are in public collections including the Art Institute of Chicago; Art Gallery, Toronto; Fondation Maeght, St Paul de Vence; Guggenheim Museum, New York; Musée National d'Art Moderne, Paris; Museum of Fine Arts, Houston; Museum of Modern Art, New York; Tate Gallery, London.

TAKIS



Takis: . . . on the contrary, you have to make things appear much simpler than they actually are. My intention is not to make something complicated; for me, just a piece of magnet and a nail floating there can make me meditate. So I don't need to make any atomic reactor. My attitude towards scientists is one of great respect, and I wish them to feel the same respect towards the artists today, and break this isolation, which has lasted for centuries. I wish there would be a much closer contact between artists and scientists - a much, much greater contact. So my intention is not complicated at all. On the contrary, it is to find the most simple means possible. Of course, a nail next to a magnet doesn't say a lot, but to me it says already very much - floating, I mean.



JEAN TINGUELY



La Spirale, 1966
 Iron, motor, wood
 Size 260 x 60 x 30
 Collection Denise René - Hans
 Mayer Gallery, Krefeld

Fontaine b5
 Iron, wood, rubber tubes, motor
 Size 250 x 50
 Collection Denise René - Hans
 Mayer Gallery, Krefeld

Tinguely was born at Fribourg, Switzerland in 1925. He studied at the School of Fine Arts in Basle. From 1945 he made constructions in wood, iron, paper, etc. introducing the element of movement in 1948. In 1952 he moved to Paris where he developed a series of 'reliefs métamécaniques' in which the element of chance was introduced into the mechanism. These led on to the 'self-destroying' machines, one of the most spectacular of which, 'Hommage à New York', destroyed itself in the sculpture garden of the Museum of Modern Art in New York in 1960. In November 1959 Tinguely gave a lecture at the Institute of Contemporary Arts in London: 'Tinguely sat motionless and silent on the podium while two tape recordings were played simultaneously. The first involved Tinguely himself attempting to explain his theory of stability in modern machine movements. He did so in atrocious English, and the second tape was of an English woman making continual interruptions and corrections in an aggressive voice'. (Frank Popper: 'Origins and Development of Kinetic Art'.) Tinguely is one of the most individual and widely acclaimed kinetic artists and has participated in many international exhibitions including Documenta 4, Kassel, 1968, and The Machine, Museum of Modern Art, New York, 1969. The Hanover Gallery in London held a one-man show in 1963.



For me, the machine is above all an instrument that permits me to be poetic. If you respect the machine, if you enter into a game with the machine, then perhaps you can make a truly joyous machine - by joyous, I mean free. That's a marvellous thing, don't you think? From Calvin Tomkins' profile of Tinguely 'Beyond the Machine', *The New Yorker*, 10 January 1962.

Light Disc, 1962
Metal, wood, motor
Size 175 x 175 x 25
Collection the Artist

Dancer
Motor, cloth, nails
Size 170 x 150 x 150
Collection Denise René - Hans
Mayer Gallery, Krefeld

Günther Uecker was born in Wendorf, Mecklenburg in 1930. From 1949 to 1955 he studied painting at Wismar, Berlin and Düsseldorf. He participated in the first exhibition of Group Zero in 1961. He collaborated with Mack and Piene in making 'light mills' and in 1963 was awarded a Grand Prix at the San Marino Biennale. He lived in New York, 1964-65. He has shown widely in Europe and the USA since 1969, sometimes with Group Zero and sometimes alone. His works are included in many major public collections in Europe, USA and Japan.

The artist finds a multitude of forms and structures which become a sign to him and which he knows how to direct. He is the conductor of a creative performance. He is to make the choice among the variety of existence, to let the river flow and himself to see, enquire into space and give it significance in time. Let us leave behind the signs, pushing one another, effacing one another. Let us leave the world of objects. Let us break through the fences and railings, become invisibly visible where the world of silence becomes open. Remains of a self-transforming world. Leave them behind. Use them not as walls and bars to make us blind, seek no rest, keep on the move.

GUNTHER UECKER





GREGORIO VARDANEGA



Joyful Rhythm, 1965
Perspex, light, motor
Size 45 x 45
Collection Denise René Gallery,
Paris

Vardanega was born in 1923 in Possagno, near Venice, Italy and studied at the Academy of Fine Arts in Buenos Aires, Argentina. He travelled to Europe in 1948-49 and returned to settle in Paris in 1959. Vardanega was a member of the Argentinian 'Art Concret' group, 1946, and showed with it for some years before his first one-man show at the Galatea Gallery in 1955. He was a founder member of the 'Arte Nuevo' group in 1955 and of the group of non-figurative artists of the Argentine (ANFA) in 1956. He has had one-man shows at the Gallery H, Buenos Aires, 1958; and Galerie Denise René, Paris, 1969; and has participated in the 'Nouvelle Tendance' movement and in group shows of kinetic art in Europe, the USA, Israel and Canada. His works are to be found in the public collections of the National Gallery of Fine Art, Buenos Aires; Musée d'Art Moderne de la Ville de Paris, and the Rembrandt Art Foundation, Capetown.

... All these projects are planned to animate architectural façades (kinetic walls), or to be parts of permanent displays in public parks, or indeed to be the elements of a new aesthetic. Because I think that ordered and balanced constructions contribute to a richer discernment, an improved mind and a general psychological balance.

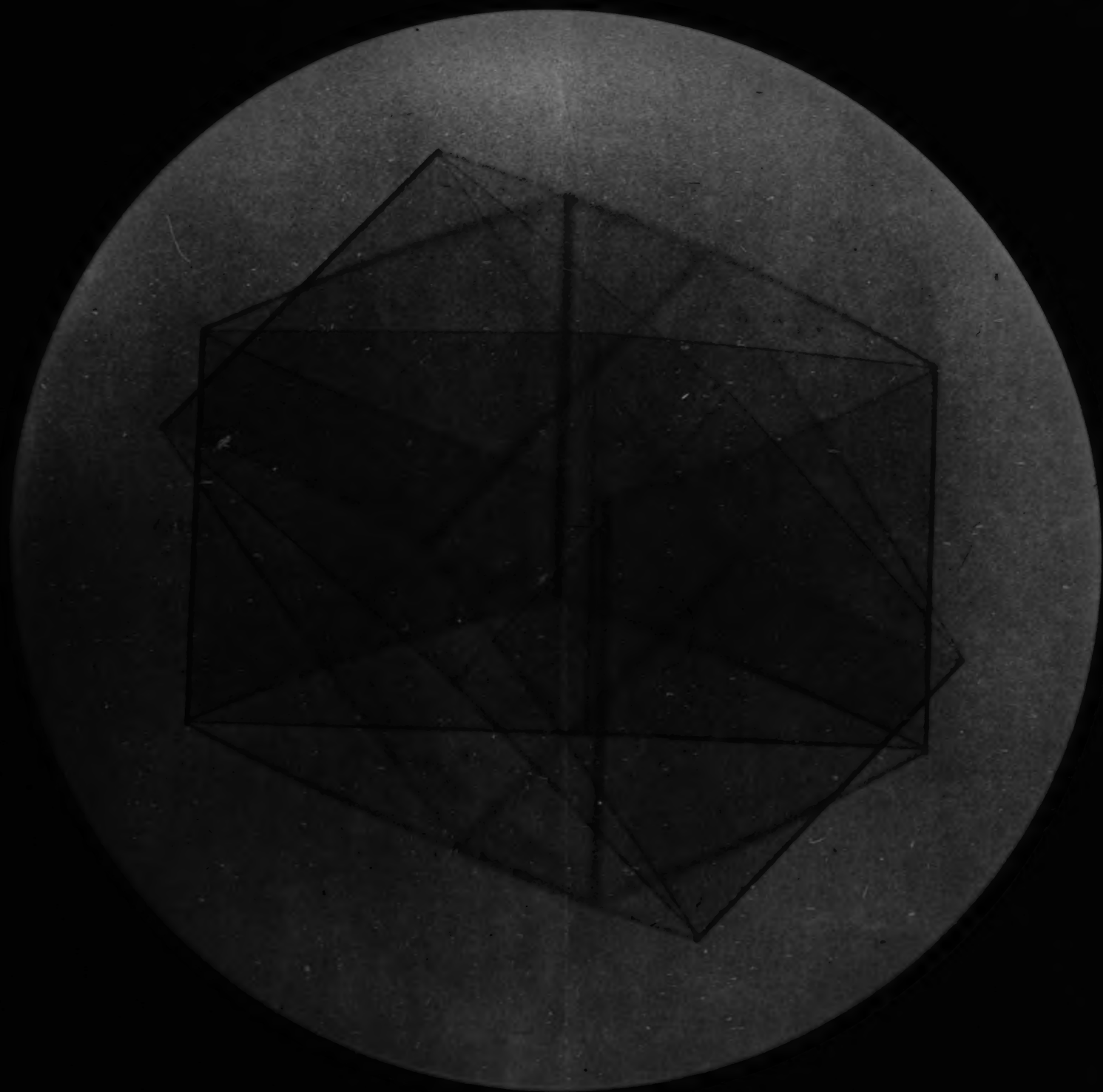
GABRIELE DE VECCHI



Axonometric Deformation, 1965
Perspex, aluminium, lights
Size 45 diameter
Collection the Artist

Gabriele de Vecchi was born in Milan in 1938, where he lives and works. He studied at Brera Academy, Milan and was a founder member of Gruppo T in 1959. He participated in manifestations of 'Arte Programmata', 1962-64 and 'Nouvelle Tendance'. Since 1965 he has made structures by means of changing lights on reflecting and transparent screens (axonometric deformation), and been concerned with environments defined by changing light lines, experimental films and with industrial design. Works by de Vecchi are in the collections of the Galleria Nazionale d'Arte Moderna, Rome; Museo Civico d'Arte Moderna, Turin, and the Galleria d'Arte Moderna, Spoleto.

Hypothesis as a casual explanation of phenomena. Geometry to explain properties that don't change passing through transformations that are always different. Light not as a particular reality, but as the essence of things. Research as a conquest to be done step by step and not by assault. Movement as the realization of latent power. As little mediation as possible to display the object as it is, making use of common processes of verification and control. Sequence as relationship between what comes between and what comes after.



Programmed Main Object
(Mother) controlling two
Subsidiary Objects (Daughters),
1970

Steel, polyester, projector
lamps, electronics

Size 65 x 100 x 60

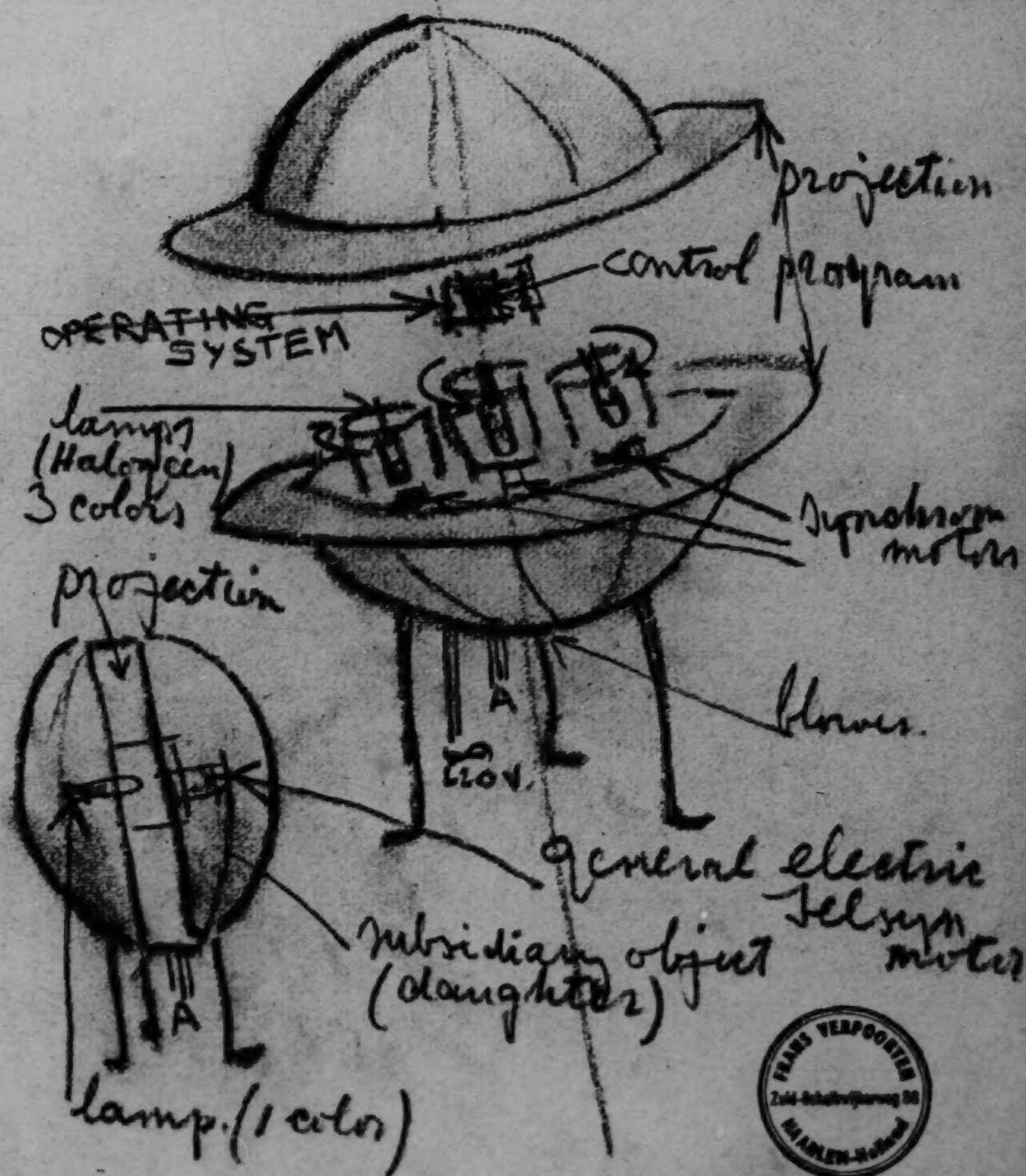
Collection the Artist

Frans Verpoorten was born in
1924 in Haarlem, Holland. He
studied painting at Antwerp /
Art Academy, Holland, but is
self-taught in etching and
kinetic sculpture. He has works
in the collections of the Dutch
Government; City of
Amsterdam; Frans
Halsmuseum, Haarlem; Centraal
Museum, Utrecht; Stedelijk
Museum, Alkmaar; Museum
Boymans van Beuningen,
Rotterdam; IBM, Amsterdam;
Royal Steel Works, Ymuiden;
Atomic Research Centre,
Petten; and various private
collections in Holland, France
and the USA.

*Contrary to the alarming tendency
to fear the domination of the
chilling technocracy of our age, I
do allege: be happy living
nowadays, in times in which
technology offers us a basis for
artistic experience.*

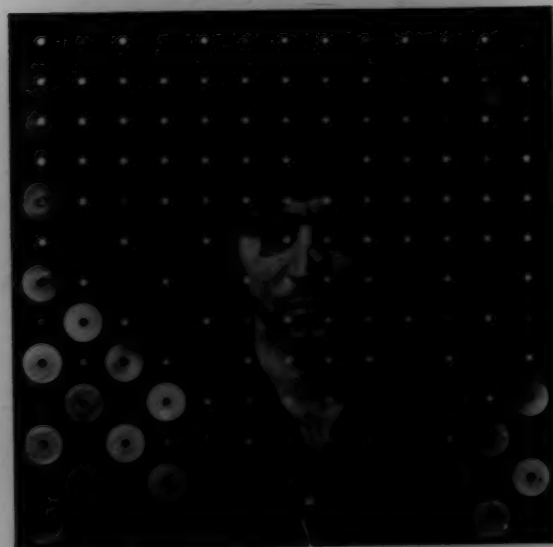
FRANS VERPOORTEN





Kinetic object designed for exhibition
in Hayward Gallery, London. F. VERPOORTEN

ROGER VILDER



Double Contraction, 1970
Steel springs, sprockets, roller
chain, bearings, neon,
aluminium, motor
Size 230 x 230 x 35
Collection the Artist

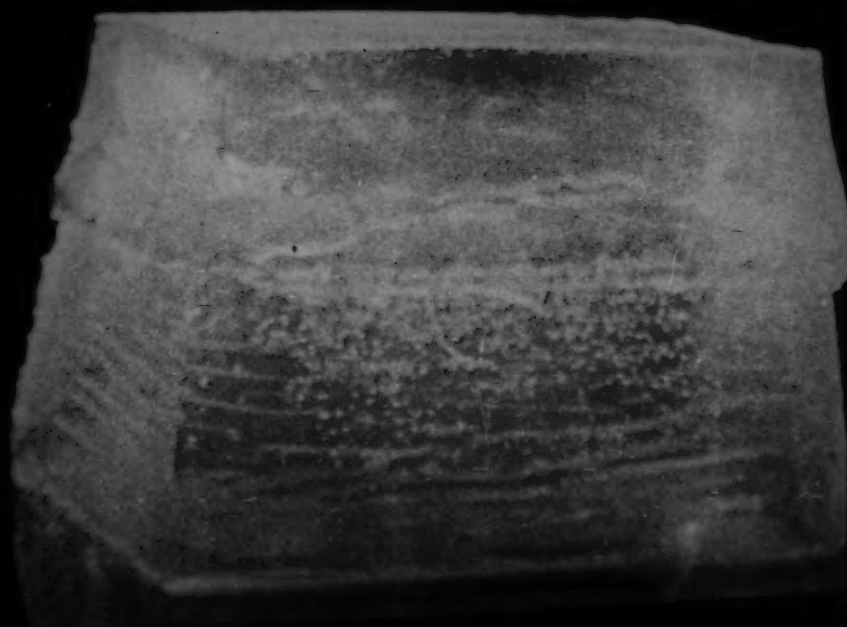
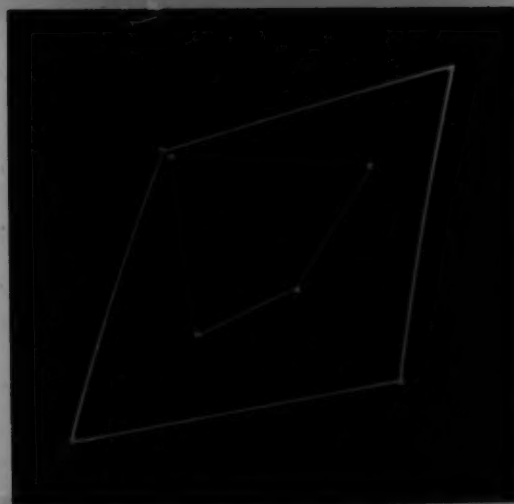
Jello, 1970
Silicone, electric light, vibrator
Size 152 x 75 x 75
Collection Howard Wise
Gallery, New York

Roger Vilder was born in 1938 in
the Lebanon and studied at Sir
George Williams University,
Montreal. He is a Canadian
citizen. He has had one-man
shows at the Libre Gallery,
Montreal, 1965; Siècle Gallery,
Montreal, 1968; Pollock Gallery,
Toronto, 1970; and participated
in group shows in Canada and the
USA. Works by Roger Vilder in
public collections include the
Musée d'Art Moderne, Montreal
and Forbes Magazine, New York.
He is represented in the
Canadian Pavilion, Expo 70,
Osaka, Japan.

*I consider 'magic' to be the most
fascinating and beautiful aspect of
life. In my work, I try to recreate a
sense of magic by dealing with
phenomena pertaining to life such
as randomness, the cycle, time and
space.*

Jello

Double Contraction



CATALOGUES OF ART EXHIBITIONS ORGANIZED BY THE ARTS COUNCIL
OF GREAT BRITAIN REPUBLISHED ON MICROFICHE

Published on microfiche by:

Chadwyck-Healey Ltd
20 Newmarket Road
Cambridge CB5 8DT
England

Chadwyck-Healey Inc
623 Martense Avenue
Teaneck NJ 07666
USA

Date of publication and production of master: 1982

Series: The purpose of this series is to make available those catalogues that have lasting interest through their text or their illustrations. Catalogues and cumulations of titles in the series are available from the publishers.

Serial numbers: Each title is identified by a three-part serial number. The first part of the serial number designates the sales list in which the title was first announced. The second part indicates the agent of publication, i.e. the museum, gallery or organisation that was responsible for the publication of the catalogue. The third part of the serial number is the number allotted to that title.

Copyright, microfiche edition: Arts Council of Great Britain and Chadwyck-Healey Ltd.

Location of original: Arts Council of Great Britain, 105 Piccadilly, London W1V 0AU.

Technical data: Producing laboratory: Chadwyck-Healey Microform Publishing Services, 10 North End, Bassingbourn, Cambs., England.

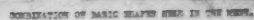
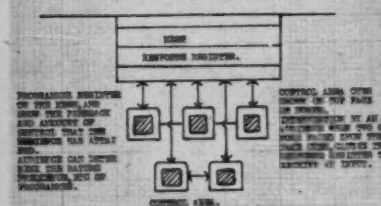
STEPHEN WILLATS



Visual Homeostatic
Information Mesh, 1970
Wood, plastics, resin, electronics
Size 210 x 195 x 135, humps
60 x 60 x 45 long
Circuit consultant Chris
Grimshaw
Collection the Artist

Stephen Willats was born in England in 1934 and studied at Ealing College of Art, 1960-63. He showed drawings and notes of his manual constructions at the Chester Beatty Research Institute in 1964, and began to build 'visual automatics' the following year. He has exhibited in group shows since 1966 in England, Ireland and on the Continent. His first one-man show was at the Museum of Modern Art, Oxford in 1968. Willats has taught at Ipswich School of Art, 1965, and at present teaches at Nottingham. He has written extensively in art and technical journals, and founded 'Control' magazine in 1965.

Visual Homeostatic Information Mesh has been structured so that the audience realize the potential and acquire the implications of the conceptual models which have been the determinants for this project, through involving them directly in cognitive processes towards Homeostasis through interactive and essentially self-determined behaviour between themselves and other people using the Mesh as a response system, the area in front (i.e. the Humps) acting as a control. The project is designed so that a level of partial interaction and as a result partial control can be realized and achieved quickly by an audience, but this can extend to a point of full operation as they acquire the constructs of the control system. The amount of control exercised by a person is directly related to the state of their parameter finding behaviour with the presented context.



IM 7, 1967
Mixed media
Size 100 x 98 x 98
Collection the Artist

Bryan Wynter was born in London in 1915 and studied at the Slade School, London University 1938-40. Between 1951 and 1956 he taught at Bath Academy of Art. Since 1945 he has lived mostly in Cornwall. He has had ten one-man shows at the Redfern and Waddington Galleries, London, including one of kinetics in 1965. He is primarily a painter. Works by Bryan Wynter in public collections include the Tate Gallery, London; Victoria & Albert Museum, London; Museum of Modern Art, New York; The Arts Council of Great Britain; British Council; Contemporary Art Society; Gulbenkian Foundation; Stuyvesant Foundation; Ulster Museum, Belfast; Fitzwilliam Museum, Cambridge; Whitworth Art Gallery, University of Manchester; Warwick University.

BRYAN WYNTER





My painting has long been concerned with metamorphosis and movement. My kinetic work extends but does not replace it. It is a matter of submitting to necessary mechanical restrictions to gain a new particular freedom because no other way is open.

'Freedom is the consciousness of necessity' (Marx).

'Necessity is the mother of invention' (Trad).

JOHAN VAN ZUTPHEN



Kinetic Object with Rotating
Sphere, 1970

Perspex, wood, metal, neon

Size 195 x 90 x 90

Collection the Artist

Kinetic Object consisting of
8 Rotating Cylinders, 1970

Perspex, wood, metal, neon

Size 237 x 100 x 100

Collection the Artist

Johan van Zutphen was born in
Utrecht, Holland in 1921 and
studied at technical colleges and
academies of art in Rotterdam
and The Hague. He has taught
art and art history at the Simon
Stevin Comprehensive School,
The Hague, since 1950.

*The intention of the first work
shows the changes in its external
form arising from changes in the
spatial relation between the
beholder and the object, or of
forms in their relation to each
other. A greater measure of
objectivity is attained by relating
the cause of the change of form,
not to the beholder but to the
object itself.*

*In the works exhibited here the
additional form has been reduced
to a system of straight lines; the
movement manifests itself in
modulations of moiré-effects.*

